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# UPHOLSTERED FURNITURE: EFFECT OF CONSUMER INFORMATION AND EDUCATION ON COGNITION AND CHOICE

A PROJECT CONDUCTED
FOR
CONSUMER AND CORPORATE AFFAIRS CANADA

BY

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The views presented in this paper are those of the authors and do not necessarily reflect the views or positions of the Department of C.C.A.

## EXECUTIVE SUMMARY

This report describes an experiment about consumer choice of upholstery fabric. The purpose of the study was to prepare and test the effect of several different approaches to providing consumers with information and educating them about the flammability of upholstered furniture.

The study measured the effect of these different approaches on

1. consumers' awareness and understanding of fabric flammability, and some related issues; and
2. consumers' evaluations of some sample pieces of upholstery fabric and their choice from those samples. The samples differed in their ability to resist ignition.

The findings form the basis for recommendations about the type of standards for upholstered furniture flammability which might be introduced in Canada.

Consumers who participated were divided in such a way that each of the different educational and informational approaches was tried. At the start of the experiment participants completed a quiz which established their level of knowledge about fabric flammability and serviceability. They then experienced one of the different educational approaches. This was followed by a meeting with them in their homes, where they were shown a variety of upholstery fabrics and asked to choose one. This was intended to resemble as closely as possible an actual purchase of fabric to reupholster one of their pieces of furniture. The information

given to the consumer during this selection process was also varied, by changing the type of labels on the fabrics.

## THE EXPERIMENT

### Participants

Consumers were selected for the study through cooperating service, church and community groups in the Winnipeg and Edmonton areas. To encourage participation and to increase the realism of choosing a fabric, individuals were offered the opportunity to win enough of the chosen fabric to reupholster a sofa and/or chair.

Groups were assigned to different educational treatments. Before they experienced any treatment, each person completed the quiz about fabric serviceability and flammability. Quiz results were used to categorize participants into three levels of knowledge and experience - high, medium and low. Those in the highest level were randomly divided into four sub-groups, each corresponding to a different type of information shown to them while they were selecting a fabric. This same process of division was followed for both the medium and low knowledge levels.

A total of 448 households participated, of which 44 had two respondents, usually husband and wife, who participated jointly in choosing a fabric. The remaining participants were mostly married women, but included 47 single females and one single male. Comparison with population figures showed that the subjects were quite representative of the population as a whole except that the lowest socioeconomic group was not well represented. As it is

doubtful that this group purchases much upholstered furniture, the subjects were reasonably representative of the population of interest for this study.

Design of the Experiment

Four different approaches to consumer education and four different types of consumer information were used. Together these gave a total of 16 (4 x 4) different combinations or strategies for consumer education and information.

The four consumer education approaches are labelled CE 1 to CE 4, for ease of reference. CE 1 was a control group who received no educational experience in the study. The control group provided a benchmark against which the relative effect of the other three educational approaches could be measured. CE 2 involved a 20-minute audio-visual program about upholstered furniture, emphasizing serviceability and flammability. Participants in CE 3 received a twelve page pamphlet about upholstered furniture, with sections on serviceability and flammability. Those groups in CE 4 saw the audio-visual presentation and were also given a pamphlet. The audio-visual presentations were shown and the pamphlets given out one to two weeks before the in-home appointments.

At their homes, participants were shown a fabric sample book containing twelve different fabric styles. These were all in a similar price range, had little or no pattern and came in a similar range of colors. Six fabrics were more formal in style and the other six were casual. In both formal and casual styles, the (iii)

durability and flame retardance of the fabrics varied as follows: low durability, both flame retardant (FR) and non-flame retardant (non-FR); medium durability, both FR and non-FR; and high durability, both FR and non-FR.

The amount and type of information provided on the fabric samples represented four different categories of consumer information, here labelled CI 1 to CI 4 for ease of reference. Fabrics for CI 1 had only basic labels giving fiber content and brand information. For CI 2 this basic label was accompanied by a hang-tag attached to the six fabrics that were flame retardant. This was a folded gold-foil tag, which opened to show the text inside and was an adaptation of one used in the U.S.A. in the Upholstered Furniture Action Council's (UFAC) voluntary labelling scheme. CI 3 included a triangular red flammability warning hang-tag attached to the six non-flame retardant fabrics. This tag conformed to the U.K. Upholstered Furniture (Safety) Regulations 1980. CI 4 had the UFAC hang-tag as well as a label giving a durability performance rating based on the "Light", "Medium" or "Rigorous" categories in the National Standard of Canada CAN2-130.7-M80, "Consumer Informative Labelling of Upholstered Fabrics for Furniture." These durability labels were included to determine how consumer awareness and use of flammability labels would be affected by the provision of other information of importance to the consumer.

After they had selected one of the twelve fabrics, consumers gave reasons for their fabric choice, once again completed the quiz, and provided background information about themselves.

Information Obtained

A number of measures were derived which were thought likely to be affected by the education and information strategies. These are called dependent variables and are underlined for clarity. The first of these is knowledge gain. This was obtained by subtracting scores on the quiz completed at the beginning of the study from scores on the same quiz at the end. As the quiz included questions on serviceability and flammability of upholstery fabric, increases in knowledge about both these aspects could be measured.

Just before participants identified which one of the twelve fabrics they would choose, they were asked what characteristics or attributes they would consider in selecting upholstered furniture. Their answers allowed determination of the number of important attributes mentioned. The number of attributes mentioned was also noted as participants commented on the fabrics as they looked through them.

The actual fabric chosen was recorded. In addition, two measures of choice efficiency were determined for the fabric chosen: whether or not it was flame retardant and whether it was sufficiently durable for its intended use. Each participant rated the likelihood they would buy each of the twelve fabrics in an actual purchase situation on a one (least likely) to ten (most likely to buy) scale. This gave a likelihood-to-buy measure.

Also collected were a number of other pieces of information (independent variables) considered likely to affect the dependent variables. The participants completed a brief questionnaire

measuring age, education, occupation, income and lifestyle. Lifestyle is a measure based on a person's attitudes, interests and opinions and has been shown to influence consumer preferences and choices.

Analysis

All the information obtained was analysed to determine the frequency with which each answer was given by the consumers participating. Where appropriate, an average could be calculated for each answer as well as the amount of variability in the answers. Propostions about the relationships between the dependent variables and the different consumer education and information approaches were tested using standard statistical techniques (analysis of variance, analysis of covariance, and Chi-square).

## RESULTS AND DISCUSSION

Most of the participants increased their knowledge about upholstered furniture during the study except for those in the control group (CE 1) who had no special educational treatment. Knowledge gain was greater for flammability than serviceability, reflecting a lower level of knowledge about flammability at the start of the experiment.

Flammability was mentioned as important by only 16 percent of the participants, before a fabric was chosen. As they were looking through the fabrics and making a choice, only 13 percent mentioned it. The fabric attributes of greatest importance were durability,

color and aesthetics. The latter two were mentioned even though the fabrics were of similar construction, color range, and aesthetic appeal within both the casual and formal categories.

Similarly, durability and aesthetic attributes were offered most frequently as reasons for the subjects' actual choices. Flame retardance was given as a reason by only six percent of subjects.

Although half of the available fabrics were flame retardant, only 56 percent of the consumers chose a flame retardant fabric. This is rather discouraging. About 75 percent of the participants had seen a presentation and/or pamphlet pointing out the hazard of flammability. About 75 percent had seen labels on the fabric sets, either warning of the flammability of some of the fabrics or indicating that some were flame retardant. Only about six percent of the total sample of consumers saw neither the presentation nor the pamphlet and viewed the fabric set with no flammability labels. Yet rather than a substantial majority choosing a flame retardant fabric, only 56 percent did, little different from what one would expect to occur purely by chance if there had been no education or information treatment. In addition, smokers and non-smokers did not differ in choosing flame retardant fabrics.

On the other hand, only one third of the fabrics were of high durability, yet 50 percent of the participants chose one of these. Only 23% chose a low durability fabric. Thus, the nature of the fabric chosen again supports the fact that durability was a more important property than flammability.

Effect of Age, Education, Occupation, Income and Lifestyle

The education levels of participants were significantly related to knowledge gain and the number of fabric attributes mentioned. Those with less than senior high school education had knowledge gain scores much lower than other groups and mentioned fewer attributes, while those with university degrees mentioned more attributes.

Age showed a negative relationship with both aspects of knowledge gain. That is, as age of participants increased the amount of knowledge gained decreased. Age was positively associated with the number of attributes mentioned. In general the older the person the more attributes mentioned. Both age and occupation showed a relationship with the level of suitability of the selected fabric for its intended use. To elaborate, respondents over 65 (and those in the "retired" occupational category) tended to select fabrics of higher durability than they needed more often than did younger subjects. Full time homemakers were more apt to choose fabrics which were less than adequate for intended use. These findings can be explained in part by the fact that many older, retired subjects needed only medium durability while young homemakers usually needed high durability fabrics.

No meaningful relationships were found between either income or lifestyle and the dependent variables measured.

Where there were differences among the four consumer education (CE) groups in one of the independent variables which had been shown to be associated with a dependent variable, this was taken into account in subsequent analysis.

Effect of Consumer Education and Information on Participants' Knowledge and Awareness

Participants in the three sets of groups who had an educational experience (CE 2, 3 and 4) increased their quiz scores for both flammability and serviceability knowledge more than the control group (CE 1) did. The audio-visual presentations had a much greater effect than the pamphlet in increasing knowledge about fabric flammability. This difference was noticeable but less marked for increases in knowledge about fabric serviceability.

These results underline the effectiveness of the slide-tape sequences. For many participants, they presented new ideas and information on flame retardance and flammability in an interesting and involving way. The combination of the pamphlet and the presentation did not have any greater effect than the presentation alone.

The educational treatments had no apparent effect on the number of attributes mentioned by the participants before they chose a fabric. During the process of selecting a fabric, however, when different participants saw different labels, those consumers who saw the fabric sets with the British flammability label, mentioned fewer important attributes but were more apt to mention flame retardance or flammability. Those who saw the durability labels also mentioned fewer attributes. Perhaps this was because these labels focused their attention on one or two attributes - flammability and durability, possibly to the exclusion of others.

## Effect of Consumer Education and Information on Fabric Choice

Results of tests to measure the effects of consumer education and consumer information on the likelihood-to-buy ratings suggested that those who saw the fabric set with the British flammability label were least likely to buy the non-flame retardant fabrics. Those who saw the fabric set with the durability labels were most likely to buy high durability fabrics. In this last case, the durability label seemed to overshadow any effect of the UFAC label, which was also attached. Thus, the UFAC label apparently did not reduce the likelihood of buying those high durability fabrics which were non-flame retardant.

There were significant differences in choice of a flame retardant fabric between those who saw the fabrics with the British label and those who did not. Sixty-five percent of the former group chose a flame retardant fabric, compared to only 53 percent of the latter. This suggests an effect of consumer information on the importance consumers attached to flame retardance. A relationship was also found between the importance attributed to the fabric property of flame retardance and a participant's choice of a flame retardant fabric.

A significant association was also found between the type of consumer information received and the sutability of the fabric chosen. Those who saw the fabric set with the durability label chose a fabric adequate for their needs more often than those who saw other fabric sets. This effect was stronger among those who saw the audio-visual presentation than for those in the control group or those who received just a pamphlet.

## CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Conclusions from the study and implications for policy can be summarized as follows:

1. For most consumers, flammability or flame retardance was not an attribute which determined choice of upholstery fabric or upholstered furniture, even when a label with this information was provided. Nor was flame retardance more important to smokers than to non-smokers. Thus, we cannot assume that consumers would select a flame retardant over a non-flame retardant product. If consumer safety is to be improved, and the number of upholstered furniture fires reduced, the ideal would be to make all furniture in the market safe. Consequently, it is recommended that a regulation involving a mandatory flammability standard for upholstered furniture would be most effective in achieving this aim. If the standard were voluntary, almost complete compliance by manufacturers would be necessary to achieve a similar degree of effectiveness.

2. The British warning label was more effective than the UFAC label in changing both attitude toward flame retardance and behavior regarding choice of a flame retardant fabric. Thus, if a completely mandatory standard is not feasible, a regulation similar to the U.K. Upholstered Furniture (Safety) Regulations 1980 (in place prior to December 1982), requiring that non-complying furniture bear a warning label, is

recommended. This is preferable to a program similar to that of UFAC where only furniture complying with a voluntary standard is labelled, while furniture which is more flammable bears no warning.

3. The education treatments used in this study, to which the consumer was exposed only once, had little effect on choice behavior. All the treatments, however, increased participants' knowledge of furniture flammability. The audio-visual presentation was much more effective than the pamphlet in increasing both flammability knowledge and awareness of both the British and UFAC labels. This finding, along with the greater effect of the British label over the UFAC label, illustrates the relative impact of visual stimuli over textual material for educating consumers and conveying information to them.

4. Immediate effects cannot be expected from any consumer education program; however, as all the educational treatments affected knowledge gain, repeated efforts might eventually affect attitude (importance of flame retardance) and thus behavior. Flame retardance must be considered more important before consumers will choose it voluntarily; such an attitude change can only be brought about by repetition and reinforcement. This implies a long-term commitment to consumer education programs in order to change consumers' attitudes and ultimately their behavior.

5. If a consumer education program is being contemplated to accompany either a mandatory or a voluntary standard, funds for such a program, at least initially, would be most effectively directed toward a series of short television sequences on the subject. These could be repeated several times in the next few years.

6. Although a mandatory standard might be more costly to implement than a voluntary one, these costs should be weighed against those of any long-term educational program, as discussed above, which would be necessary to improve the effectiveness of any voluntary standard.

## ABSTRACT

This report describes a study on the effects of different consumer education (CE) and consumer information (CI) treatments on consumer choice of alternative products, specifically upholstery fabrics. The purpose of the study, which is based on an experimental design, was to develop and test the effectiveness of different strategies in changing consumer knowledge and behavior with respect to fabric flammability.

Over 400 consumers in Winnipeg and Edmonton participated in the study. Their knowledge of aspects of upholstery, including serviceability and flammability, was measured before and after the administration of the different education and information treatments. Also measured was their choice behavior in a simulated purchase experience and demographic, socioeconomic and lifestyle information about themselves and their families.

The results show that while consumers showed increases in awareness and knowledge between pre- and post-tests, their behavior regarding choice of an FR fabric did not differ significantly among CE treatment groups. The consumer information treatment based on the British system of flammability labelling was found to have most effect on consumer response.

Demographics and socioeconomic status were found to have some influence on the dependent variables measured.

The implications of these findings for policy decisions are discussed.

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## INTRODUCTION

The purpose of this study was to design and test strategies for the provision of consumer information (CI) and consumer education (CE) on textile product safety, using the example of upholstered furniture.

The specific objectives of the study were:

1. To develop several strategies combining consumer information (CI) and consumer education (CE) on the subjects of upholstered furniture and textile flammability;
2. To measure the effect of different strategies on:
   (a) consumers' awareness and understanding of textile flammability and related issues; and
   (b) consumers' evaluations of and choice among selected pieces of upholstery fabric which vary on several factors including resistance to ignition; and
3. To determine the effect of demographic, socioeconomic and life-style variables on consumer response.

## HYPOTHESES

The following null hypotheses were tested to meet objective two.

1. Consumers exposed to different CE/CI strategies will not differ significantly in:
   (a) knowledge gain, with respect to flame retardance and fabric serviceability
   (b) number of salient and/or important dimensions considered; or
   (c) likelihood of purchase

2. No significant association exists between exposure of subjects to different CE/CI strategies and
   (a) fabric chosen; or
   (b) choice efficiency, with respect to flame retardance and suitability for use.

BACKGROUND AND JUSTIFICATION

This research developed from a recognition of the importance of informing and educating consumers about a problem of increasing concern - the flammability hazard of upholstered furniture. A review of fire statistics from three Canadian provinces over a period of several years showed that upholstered furniture was the material first ignited in 5.3-6.3% of all fires, accounting for 11.3-14.9% of all fire deaths and 2.3-3.1% of all fire property losses - more than any other material under examination by the Product Safety Branch of Consumer and Corporate Affairs Canada.[1] These statistics suggest the importance and timeliness of a detailed examination of policy issues like upholstered furniture flammability regulation and labelling. Canada currently has no specific voluntary or regulatory standard for upholstered furniture flammability.

In the United Kingdom, all upholstered furniture must be labelled as to its resistance (or lack thereof) to small flame ignition. Since December 31, 1982, all upholstered furniture must

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[1] These statistics are summarized in "Upholstered Furniture Flammability Program," an unpublished working paper of Consumer and Corporate Affairs Canada's Product Safety Branch, 1980.

be resistant to ignition by cigarettes. In the U.S.A. the federal government originally proposed to regulate upholstered furniture, but the Consumer Product Safety Commission accepted instead, on a trial basis, a voluntary program operated by the Upholstered Furniture Action Council (UFAC). This voluntary program is based on a fabric classification scheme, construction improvements, a labelling plan and a compliance procedure. If the UFAC program is successful and a high compliance rate is achieved in the U.S.A., furniture not meeting the UFAC standard might be imported into Canada.

It is now urgent that some specific standard be developed for the flammability of upholstered furniture sold in Canada. The question remains, however, whether such a standard should be mandatory or voluntary.

Knowledge of consumers' probable reactions to industry's provision of information indicating compliance or non-compliance with a voluntary standard should be useful in evaluating the possible effect of such a voluntary scheme. The possibility of information overload, that is too much information to comprehend at once, may affect consumer use of such compliance information. For example, other disclosures such as durability ratings that the upholstered furniture industry may be asked to supply, could influence the effectiveness of flammability labelling.[2]

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[2] See for example, National Standard of Canada, CAN2-130.7-M80, Consumer Informative labelling of Upholstery Fabrics for Furniture.

This study was developed from and built upon findings from the authors' previous studies of consumer behavior and textile product flammability. These include studies of information search and alternative evaluation and the application of marketing in the non-profit sector (Brown, 1982).

The results of the experiment conducted indicate which of several strategies combining consumer information and education was most effective. This provides information for Consumer and Corporate Affairs about how to best promote consumer product safety and facilitate the preparation of information and education programs to be introduced on a wider scale. The findings should thus help to determine the feasibility of a voluntary standard and/or labelling program for upholstered furniture as an alternative to mandatory regulation.

The principal benefit of collecting this information, which was not available from existing sources, is that a number of strategies have been tested without large-scale implementation. The consequence of <u>not</u> having this information is that a full scale scheme inappropriate to the Canadian consumer could have been introduced, at considerable cost of time, money and other resources. Ineffective strategies might have resulted from inadequate understanding of consumers' reactions to the provision of information about compliance or non-compliance with textile flammability regulations. Erroneous assumptions about consumers' experience with and knowledge of the purchase and use of upholstered furniture also could have led to the development of ineffective strategies.

## RELATED LITERATURE

For a sample of California consumers, Rucker et al (1980) found that consumers desired furniture flammability standards, but few were willing to pay the increased price associated with a national standard. Rucker (1980) also found California consumers to be generally unknowledgeable about furniture flammability and concluded that consumer education is both needed and apt to be difficult to accomplish, given consumers' lack of desire for information on flammability.

Crown and Brown (1981) used conjoint analysis[3] on preference data from a sample of Edmonton consumers to study flame retardance as an evaluative criterion. They found that when some upholstery fabrics and blankets were labelled flame retardant, this product attribute was more important to consumers than were price, care instructions or hand. This finding was supported by a more recent replication with a larger stratified random sample of Alberta consumers (Crown and Brown, 1981a). Perhaps consumers who do not normally think about flame retardance make assumptions about the safety of textile products, assumptions they are forced to alter when confronted with an F.R. label on some products, or in comparison, a lack of one on others.

The authors also studied consumers' attitudes toward flammability and its regulation in both Alberta and Manitoba (Crown and Brown, 1981a; Brown and Crown, 1983) and found generally high

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[3] Conjoint analysis is a method by which a consumer's preferences are structurally decomposed into part-worths, importance weights or ideal points which express the utility of different attributes and different levels of those attributes in the consumer's overall evaluation of a set of stimulii.

agreement with the importance of protection from flammability, preference for flame retardant household textile products and the need for both F.R. labelling and government regulation.

In a study of consumer information sources for home furnishing textile products, Horne and Crown (1983) found that 90% of respondents wanted to be able to identify flame-retardant products, including upholstered furniture. The preferred source for this information was the product label. They also found, however, that at least 50% of respondents did not use the information already provided on labels.

Considerable research effort has been spent studying consumer use of information. Sproles et al. (1978, 1980) found that the most efficient consumers (those making the "best" choice) were those who used the most information, but this finding was dependent on the quality of the information provided and its relevance to the consumer. Crosby and Grossbart (1981) found that disclosure of information about a salient attribute (carpet performance) increased preference for performance rated brands, while Nourse and Anderson (1973) found that when consumers were made aware of performance labels for carpets, this information tended to cause an overall movement of choices towards heavy wear-rated carpet for higher priced carpets.

Other studies have suggested that provision of information does not significantly affect consumer choice. Such findings often lead to the suggestion that consumer education is needed if consumer information is to have its desired effects. Crosby and Taylor (1981) studied the effect of consumer information (wear

rating labels) and consumer education (pamphlets) on product performance expectation and preference for carpets. Information was found to influence product performance expectations and preferences of males but not of females. Consumer education affected the number of attributes considered but not the relative importance of such attributes. Although the effect of consumer education on product performance expectations appeared considerable, the result was not statistically significant with the small sample of consumers. These findings suggest two important considerations when sampling consumers for such a study: (i) the importance of a large enough sample size; and (ii) the importance of including males in the decision-making units under study.

## METHODOLOGY

The design of the study was a pre-test/post-test experiment. Four consumer education (CE) treatments and four consumer information (CI) treatments were developed to give a total of 16 different strategies (see Table 1).

Participants were identified and assigned to different strategies. Participants were houshold decision-making units (DMU), usually the wife or the husband and wife. Following the administration of a pre-test, CE treatments were administered. The pre-test was designed to measure:

1. previous experience with upholstered furniture purchasing
2. knowledge about upholstered furniture flammability
3. knowledge about upholstered furniture serviceability.

Following the CE treatment an in-home appointment was scheduled, during which participants were asked to choose among a variety of upholstery fabric samples in a simulated purchase for reupholstering a designated piece of furniture already in the home.[4] They also provided reasons for their choice, background information about themselves and their families and completed a post-test.

Figure 1 shows the various phases and time-line of the study. The details are discussed below.

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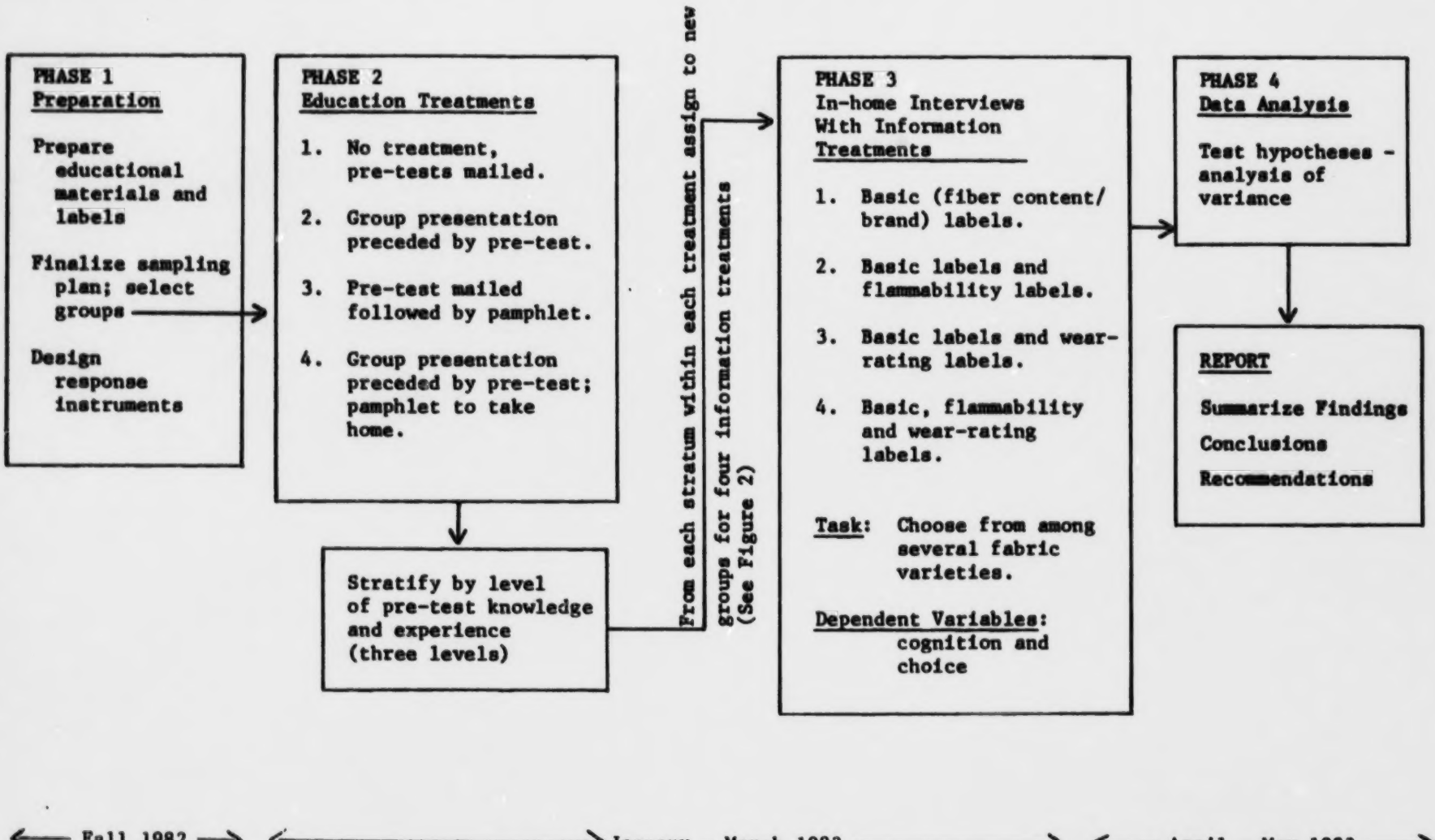
[4] It is recognized that the question of furniture flammability is much more complex than the flammability of the upholstery fabric alone. However, an experiment involving manipulation of variables with whole pieces of upholstered furniture is almost impossible. The experiment conducted indicates the effect of flammability labels, whether on upholstery fabric or pieces of furniture.

TABLE 1. EXPERIMENTAL DESIGN: CI AND CE STRATEGIES

| Label Information (CI) | Consumer Education Treatments | | | |
|---|---|---|---|---|
| | None | 1 Presentation | 2 Pamphlet | 3 Presentation Plus Pamphlet |
| Fiber content/ brand only | Strategy 1 | Strategy 2 | Strategy 3 | Strategy 4 |
| F.c./brand plus UFAC labels | Strategy 5 | Strategy 6 | Strategy 7 | Strategy 8 |
| F.c./brand plus B.S. 5852 labels | Strategy 9 | Strategy 10 | Strategy 11 | Strategy 12 |
| F.c./brand, UFAC labels and wear ratings (CAN2-130.7-M80) | Strategy 13 | Strategy 14 | Strategy 15 | Strategy 16 |

**Figure 1. Phases and Time Line for the Study**


PHASE 1
Preparation
Prepare educational materials and labels
Finalize sampling plan; select groups
Design response instruments
PHASE 2
Education Treatments
1. No treatment, pre-tests mailed.
2. Group presentation preceded by pre-test.
3. Pre-test mailed followed by pamphlet.
4. Group presentation preceded by pre-test; pamphlet to take home.
Stratify by level of pre-test knowledge and experience (three levels)
From each stratum within each treatment assign to new groups for four information treatments (See Figure 2)
PHASE 3
In-home Interviews With Information Treatments
1. Basic (fiber content/ brand) labels.
2. Basic labels and flammability labels.
3. Basic labels and wear-rating labels.
4. Basic, flammability and wear-rating labels.
Task: Choose from among several fabric varieties.
Dependent Variables: cognition and choice
PHASE 4
Data Analysis
Test hypotheses - analysis of variance
REPORT
Summarize Findings
Conclusions
Recommendations
Fall 1982
January - March 1983
April - May 1983
(preliminary)
Final Report:
August 1983

SUBJECTS

Approximately 500 consumers were solicited for the experiment from cooperating service, church and community groups in the Edmonton and Winnipeg areas. This method of obtaining a consumer sample facilitated the "presentation" CE strategy. Groups were recruited which broadly represented consumers of upholstered furniture. By seeking cooperation from a variety of different groups the experimenters were able to involve a cross-section of consumers who varied in demographic and socioeconomic characteristics. The groups were offered $2 per member participating. In addition, individual participants were offered the opportunity to win sufficient fabric of their choice to reupholster a sofa and/or chair, up to a maximum value of $400.00. This latter offer not only encouraged participation, especially among persons interested in upholstered furniture (the population of interest in this study), but also made the "choice" outcome in the experiment more realistic. Consumers were more apt to indicate their <u>real</u> choice, rather than what they thought the researcher wanted them to choose, as they believed they had a chance of actually obtaining it.

Initial contact with each group was by telephone and letter (Appendix A), with a follow-up telephone call to determine willingness to cooperate. Each group member received letters outlining the requirements of participation, and signed a consent form (Appendix A) before beginning participation in the study. It was stressed that participation was voluntary. Thank-you letters were sent to all cooperating groups.

Groups were assigned to CE treatments in a manner designed to obtain approximately the same number of subjects in each, to distribute the CE treatments geographically where possible, and to fit in with the groups' predetermined scheduling. One member of each household (the group member) was pre-tested prior to any CE treatment.

For CE treatments 2 and 4, which included the group audio-visual presentation, the pre-test was usually administered immediately before the presentation began. For treatments 1 and 3, which included no presentation, pre-tests were distributed individually or handed out by the researchers to members of a group at one of their group meetings. Addressed postage-paid envelopes were included, when necessary, for return of the pre-test and consent forms. The pre-test information was intended to establish how knowledgeable respondents were about upholstery serviceability and flammability, based on their own purchasing experience and other sources of information. Pre-test results were used to categorize participants into one of three strata according to prior knowledge and experience. The total possible score on the pre-test was 16. Participants scoring 0-6 points were categorized as low, those scoring 7-10 as medium, and those scoring 11-16 as high. As well, pre-test results established a benchmark for measuring the effects of the various educational treatments.

Subjects within each of the three strata were then randomly assigned in equal numbers to the four CI treatments. Knowledge/experience differences among subjects assigned to the CE treatments could not be controlled but when differences

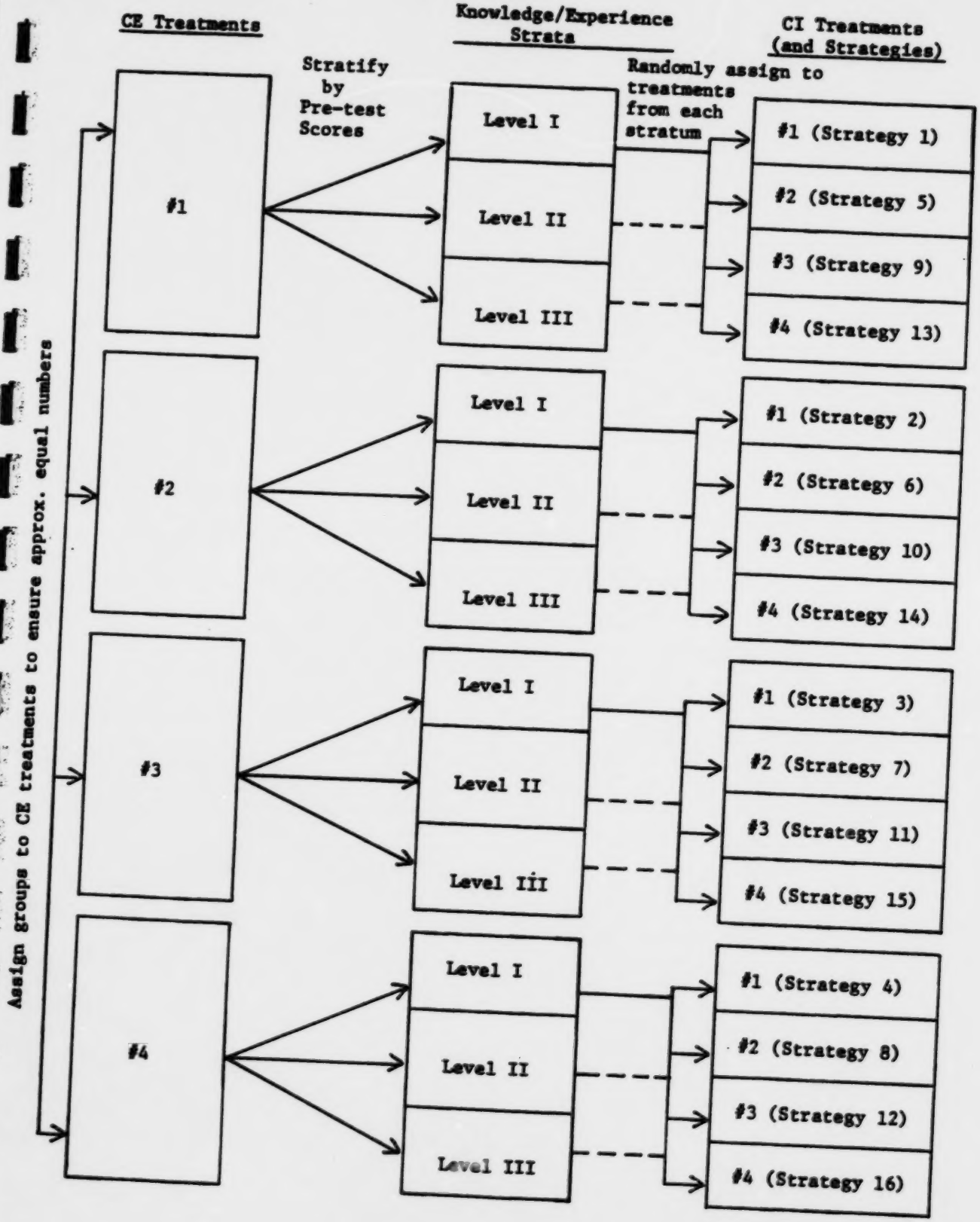
existed, they were accounted for in subsequent statistical analysis and interpretation. Figure 2 illustrates the steps taken in assigning subjects to CE/CI strategies.

CONSUMER EDUCATION (CE) TREATMENTS

The consumer education treatments preceded the in-home choice exercise.

1. Subjects in the first (control) treatment received no educational experience.
2. The second treatment (presentation) included two audio-visual sequences on upholstered furniture, emphasizing fabric serviceability and the flammability issue, followed by group discussion. The scripts for the two sequences are attached as Appendices B and C. The audio-visual presentation was prepared by the researchers with professional help, and consisted of slide/tape sequences. The presentation was scheduled for each group approximately one to two weeks prior to the in-home appointments.
3. Subjects in the third treatment received a pamphlet on upholstered furniture. This was designed by the researchers and prepared for Alberta Agriculture. It was mailed or delivered to the home approximately 10 days prior to the in-home appointment. This ensured that consumers could read the pamphlet in the week preceding the choice exercise. A copy of the pamphlet is included in Appendix D. It contains sections on both flammability and labelling, unlike most previously available pamphlets.
4. Subjects in the fourth treatment were exposed to the presentation, where they also received the pamphlet, approximately

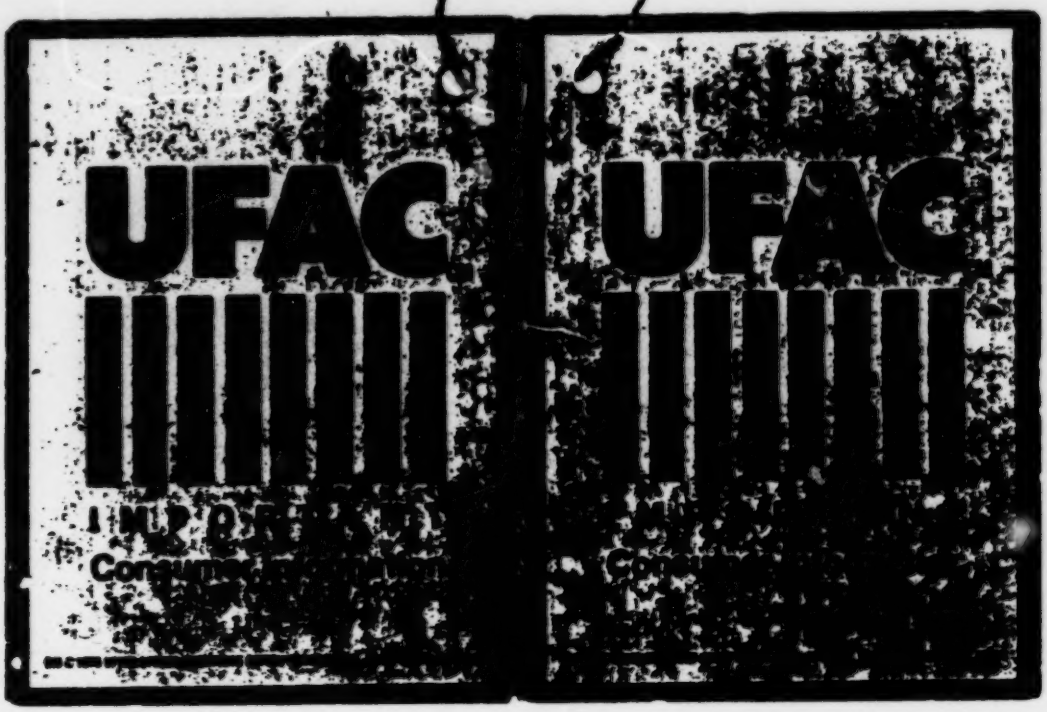
Figure 2. Assignment of DMU's to Strategies



one to two weeks prior to the in-home appointments.

CONSUMER INFORMATION (LABELLING) TREATMENTS:

1. Fabrics for treatment one (control) had basic labels like those on most upholstery fabrics and upholstered furniture currently available on the Canadian market, giving only fiber content and brand information, and for some fabrics indication of a stain repellent or soil release finish.
2. For the second treatment, the basic label was supplemented by modified UFAC hang-tags on those fabrics which were flame retardant. The hang-tag was modified to make it appropriate for upholstery fabrics rather than furniture. The label is illustrated in Figure 3. Figure 3a shows the gold foil cover of the folded hang-tag. Figure 3c shows the modified printing on the inside of the tag, while 3b shows the original printed version.
3. For treatment three, the basic label was supplemented with hang-tags which conform to parts III and VI of Schedule 2 to the United Kingdom's Upholstered Furniture (Safety) Regulations 1980 (BS 5852). The front and back of these labels are illustrated in Figure 4, except that parts of the actual label are in red. These labels were taken from pamphlets obtained from the British Embassy in Ottawa through CCA's Flammability Hazards Division.
4. For treatment four, the modified UFAC hang-tags were used as in treatment two. In addition, the fabric show cards had attached a sticky label indicating a performance rating based on National Standard of Canada CAN2-130.7-M80, "Consumer




3a →

3b ↓

**The manufacturer of this upholstered furniture certifies that with this cover fabric and filling material, the item is made in accordance with UFAC. construction criteria that are engineered to reduce, but not necessarily eliminate, ignition by a burning cigarette by insulating or modifying certain materials or combinations of materials, traditionally used in upholstered furniture manufacturing, that are most susceptible to ignition.**

**Keep your family and furniture safe from fires caused by careless smoking. Even with modern UFAC. - recommended materials and methods, smoldering cigarettes and other heat or fire sources can cause upholstery furniture fires.**

**For the protection of your family, UFAC recommends that you have at least one smoke detector in your home. An early warning of fire, starting from any cause, can help protect you and your family.**

**UFAC** The Upholstered Furniture Action Council is an association of furniture manufacturers, retailers, and suppliers organized for the purpose of conducting research into more cigarette resistant upholstering methods and implementing them throughout the industry.

For further information write UFAC, Box 2436, High Point, NC 27261.

3c ↓

**The manufacturer of this upholstery fabric certifies that it is made to reduce, but not necessarily eliminate ignition by a burning cigarette.**

**Keep your family and furniture safe from fires caused by careless smoking. Even with modern UFAC. - recommended materials and methods, smoldering cigarettes and other heat or fire sources can cause upholstery furniture fires.**

**For the protection of your family, UFAC recommends that you have at least one smoke detector in your home. An early warning of fire, starting from any cause, can help protect you and your family.**

**UFAC** The Upholstered Furniture Action Council is an association of furniture manufacturers, retailers, and suppliers organized for the purpose of conducting research into more cigarette resistant upholstering methods and implementing them throughout the industry.

For further information write UFAC, Box 2436, High Point, NC 27261.

Figure 3. UFAC Label

Careless
use of cigarettes
could set fire
to this furniture

**CAUTION**

Figure 4. British Flammability Label

Informative Labelling of Upholstery Fabrics for Furniture." The label stated that the fabric complied with CGSB CAN2-130.7-M80 and had one of the following messages.

(a) Suggested Use

LIGHT - This fabric is suitable in a household where it is subject to only occasional use.

(b) Suggested Use

MEDIUM - This fabric is suitable in a household where it is subject to more than occasional, but not constant use.

(c) Suggested Use

RIGOROUS - This fabric is suitable for use in a family household where it is subject to normal, constant use.

These labels were included to determine how consumer awareness and use of flammability labelling would be affected by the provision of other disclosures which might lead to information overload.

PRODUCT: UPHOLSTERY FABRIC

Following the administration of CE treatments, subjects were interviewed in their homes, where all other data were collected. They were asked to select a fabric to reupholster a piece of furniture in their home, from among several varieties of fabric. These fabrics represented different levels of durability and resistance to ignition.

Twelve upholstery fabrics were selected from four suppliers. The fabrics were all in the medium price range, had little or no

pattern and came in a similar color range. The twelve fabrics varied as follows:

Fabric A: casual, FR, low durability

B: casual, non-FR, low durability

C: casual, FR, medium durability

D: casual, non-FR, medium durability

E: casual, FR, high durability

F: casual, non-FR, high durability

G to L: formal, as for A to F

The suppliers agreed to supply ten sets of show cards of these fabrics. Delays in getting full sets of cards delayed the start of the project until early to mid-February.

CHOICE EXERCISE

During the in-home interview a number of sets of data were collected. The data collection instruments are included as Appendix E. Each of the final instruments was developed after piloting an earlier version with a convenience sample of eight subjects. Minor changes were made after piloting.

The in-home appointments took an average of 40 to 60 minutes. As the information related to the everyday activities of a consumer it was not difficult for the respondent to give, and indeed the audio-visual presentation, the provision of information by pamphlet, and the in-home simulation of a furniture fabric choice proved both informative and interesting for participants. Respondents did not have to do any prior preparation in order to participate.

At the end of the appointment, subjects were debriefed. The

purpose of the experiment was more fully explained and it was pointed out that some of the labels used in the experiment are not used in Canada. This was a necessary precaution to ensure respondents would not be confused in the marketplace. Subjects then signed a form attesting to their participation in the in-home appointments, ensuring that data were not fabricated by the research assistants. This signature form also indicated participants' wish to have their name entered in the draw and provided the names of those wishing to receive a summary of the study results.

DEPENDENT AND INDEPENDENT VARIABLES MEASURED

The data collected are described below by dependent and independent variable categories.

A. DEPENDENT VARIABLES

1. Knowledge gain - A post-test, identical to the pre-test, except for the omission of items 1 to 3 which measured experience, was administered after a fabric was chosen. Post-test scores minus pre-test scores gave a measure of change in consumer knowledge of upholstery fabric serviceability and flammability. Because some of the participants received no CE experience, any effect of the testing itself on knowedge gain could be detected.

2. Number of salient dimensions - DMU's were asked what characteristics they would consider in their choice of upholstered furniture. This free elicitation task helped to establish rapport and subject involvement with the experiment. Where the DMU comprised two people, the interaction between them may

have stimulated recall of more dimensions. Verbal responses were recorded and grouped by the researchers so that this variable could be defined.

3. Number of important dimensions - As participants looked through the fabrics, their comments were noted and grouped, as above, to define this variable.
4. Fabric chosen - The selected fabric of each DMU was recorded.
5. Likelihood to buy - Subjects estimated the likelihood that they would buy each of the twelve fabrics in an actual choice situation by rating each on a scale of 1 to 10.
6. Choice efficiency - The fabric selected was evaluated according to two criteria:
   (a) whether or not it was flame retardant
   (b) suitability for use - derived from a comparison of the durability of the selected fabric (low, medium or high) with its intended use. The use categories outlined in this item correspond to the rating/labelling categories used for National Standard of Canada CAN2-130.7-M80.

B. INDEPENDENT VARIABLES

A number of variables which were considered likely to affect the dependent variables were also measured. These were measured with a self-administered questionnaire completed by one or both members of the DMU.

1. Lifestyle - The lifestyle measures (Appendix E3) refer to a variety of activities, interests and opinions and were adapted from Wells and Tigert (1971). These items were factor analyzed to determine underlying relationships (factors) in the data set.

2. Demographics and socioeconomic status - Questions asked for information on level of education, years of schooling, age, occupation and income. All of these items, except occupation, were classified according to the categories in the 1982 Edmonton Area Study[5]. This permitted response patterns to be compared to establish the representativeness of the volunteers in this study. Responses to the question on occupation were categorized according to the Pineo, Porter and McRoberts (1977) categories.

SELECTION AND TRAINING OF RESEARCH ASSISTANTS

Research assistants with the necessary knowledge and skills to carry out the in-home appointments were selected. They were graduates or senior students of either clothing and textiles or interior design programs.

Group sessions were held to introduce the assistants to the project, to discuss such concerns as confidentiality and debriefing, and to give initial training in interviewing. In Edmonton, assistants were then involved in the pilot testing of the instruments. This took place in January with incomplete sample cards. Piloting was carried out in pairs, with each assistant conducting two and observing two in-home appointments. In Winnipeg, training took place in a home environment after the completed set of fabric cards was received. Each assistant conducted one and watched two or three interviews. One of the

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[5] This is the latest in a series of annual surveys of a random sample of Edmonton area households conducted by the University of Alberta Sociology Department's Population Research Laboratory.

researchers was present at each interview and discussed it with the assistants present immediately following. These training sessions helped to ensure that the same approach was taken by all the assistants. Spot checks during the study also ensured that proper procedures continued to be followed.

All assistants were given the same set of written instructions (Appendix F).

TREATMENT OF DATA

All responses were coded onto a code sheet by the assistants immediately following the in-home appointment, using a code book developed for this purpose (Appendix G). Practice coding was first carried out by the assistants on the pilot data. One assistant in each city then checked all coding for completeness and consistency. To ensure consistency in coding occupational classification, the principal researchers completed these codes.

Coded data were key-punched for entry into a computer file. A control file was entered into the computer so that once all the data were entered, analysis using SPSS programs could begin (Nie et al, 1975).

DATA ANALYSIS

Frequency distributions were prepared and/or means and standard deviations calculated for all variables. Frequencies were calculated in both absolute and percentage terms. Where appropriate, dependent variables were broken down by, and/or cross-tabulated with demographic, socioeconomic and lifestyle variables using the "Anova" and "Cross-tabs" programs. Lifestyle

variables were factor analysed to identify the different components represented.

In order to test the hypotheses, statistical analysis was carried out as shown in Table 2. A decision rule of $p \leq .05$ was used.

In addition, where the nature of the data obtained allowed, further analysis such as analysis of covariance was carried out to determine the intervening effects of demographic and socioeconomic variables on dependent variables.

TABLE 2. DATA ANALYSIS

| Null Hypothesis | Independent Variable | Dependent Variable | Analysis |
|---|---|---|---|
| 1. | Consumer Education/ Consumer Information (nominal) | a. Knowledge gain (interval) | ANOVA (two-way) |
| | | b. Number of salient/ important dimensions (interval) | ANOVA (two-way) |
| | | c. Likelihood of Purchase (interval) | ANOVA (two-way) |
| 2. | Consumer Education/ Consumer Information (nominal) | a. Fabric chosen (nominal) | Chi-square |
| | | b. Choice Efficiency (nominal) | Chi-square |

## RESULTS

### PROFILE OF SUBJECTS

Table 3 indicates the number of participating households in each CE/CI strategy. The researchers' original goal of 25 households per cell was met with the exception of two cells.

Since it was possible that participants in treatments 3 and 4 might not have read the pamphlets they received, respondents were asked whether or not they had read it. Of the primary respondents, 69% reported reading it at least in part, while 31% said no, or seemed to be unaware of the pamphlet (Table 4). Respondents in treatment 3, to whom the pamphlet was delivered as the only educational material, were slightly more apt to read it than those in treatment 4, who received it after exposure to the slide/tape presentation. Only a small number of second respondents had read the pamphlets.

A demographic and socioeconomic profile of the subjects is outlined in Tables 5 and 6. Only 41 couples chose to participate jointly, even though when contacted a wife was asked to include her husband when possible, if he would normally be involved in a decision similar to the simulated one. Because of the relatively small number of joint participants, the influence of husbands might be underestimated in the data which follow. Only one single male participated.

Approximately 30% of the primary respondents (females) were employed. They fell mainly into four occupational categories: employed professionals, semi-professionals, skilled clerical, sales and service and semi-skilled clerical, sales and service.

TABLE 3. DISTRIBUTION OF PARTICIPATING HOUSEHOLDS BY CE/CI STRATEGY

| | CE Treatment | | | | |
|---|---|---|---|---|---|
| CI Treatment | 1 Control | 2 Presentation | 3 Pamphlet | 4 Presentation and Pamphlet | Total |
| 1 Control | 33 | 25 | 28 | 29 | 115 |
| 2 UFAC labels | 31 | 27 | 27 | 25 | 110 |
| 3 B.S. labels | 33 | 24 | 27 | 27 | 111 |
| 4 UFAC labels & wear ratings | 35 | 26 | 28 | 23 | 112 |
| Total | 132 | 102 | 110 | 104 | 448[a] |

[a] Edmonton - 214
Winnipeg - 234

TABLE 4. RESPONDENTS REPORTING PAMPHLET READ

| CE Treatment | Response | Respondent 1 Frequency | Respondent 1 Percent | Respondent 2 Frequency | Respondent 2 Percent |
|---|---|---|---|---|---|
| 3 and 4 together | Yes | 75 | 36 | 3 | 14 |
| | Partly | 68 | 33 | 2 | 10 |
| | No/Unaware | 66 | 31 | 16 | 76 |
| | | 210 | | 21 | |
| 3 Pamphlet only | Yes | 42 | 39 | | |
| | Partly | 38 | 35 | | |
| | No/Unaware | 28 | 26 | | |
| | | 108 | | | |
| 4 Presentation Plus Pamphlet | Yes | 33 | 33 | | |
| | Partly | 30 | 30 | | |
| | No/Unaware | 38 | 38 | | |
| | | 101 | | | |

TABLE 5. PROFILE OF SUBJECTS: NOMINAL MEASURES

| Variable | Frequency | Percent |
|---|---|---|
| **Participant Type** | | |
| Couple | 41 | 9 |
| Wife Alone | 355 | 79 |
| Single Female | 47 | 11 |
| Other | 5 | 1 |
| **Total Household Income** | | |
| Under $10,000 | 16 | 4.0 |
| $10,000-15,999 | 26 | 6.6 |
| $16,000-21,999 | 39 | 9.8 |
| $22,000-27,999 | 50 | 12.6 |
| $28,000-33,999 | 79 | 19.9 |
| $34,000-39,999 | 58 | 14.6 |
| $40,000-49,999 | 52 | 13.1 |
| $50,000-59,999 | 30 | 7.6 |
| $60,000-69,999 | 21 | 5.3 |
| Over $70,000 | 21 | 5.3 |

| | Respondent 1 (n=448) | | Respondent 2 (n=44) | |
|---|---|---|---|---|
| | Frequency | Percent | Frequency | Percent |
| **Sex** | | | | |
| Female | 447 | 99.8 | 3 | 6.8 |
| Male | 1 | 0.2 | 41 | 93.2 |
| **Employment Status** | | | | |
| Full-time | 56 | 12.5 | 31 | 70.5 |
| Part-time | 88 | 19.6 | -- | -- |
| Unemployed | 10 | 2.2 | 3 | 6.8 |
| Retired | 40 | 8.9 | 5 | 11.4 |
| In school | 5 | 1.1 | 1 | 2.3 |
| Keeping house | 234 | 52.2 | 2 | 4.5 |
| Other | 15 | 3.3 | 2 | 4.5 |

TABLE 5 (CONT'D):

| Variable | Respondent 1 Frequency | Respondent 1 Percent | Respondent 2 Frequency | Respondent 2 Percent |
|---|---|---|---|---|
| **Occupation** | | | | |
| Self-employed professional | 3 | 0.7 | 1 | 2.4 |
| Employed professional | 17 | 3.8 | 7 | 16.6 |
| High-level management | 1 | 0.2 | 1 | 2.4 |
| Semi-professional | 36 | 8.1 | 4 | 9.5 |
| Technicians | 6 | 1.3 | 2 | 4.8 |
| Middle management | 6 | 1.3 | 3 | 7.1 |
| Supervisors | 1 | 0.2 | 2 | 4.8 |
| Foremen | - | - | 1 | 2.4 |
| Skilled clerical, sales, service | 39 | 8.7 | 3 | 7.1 |
| Skilled craft, trade | 3 | 0.7 | 8 | 19.0 |
| Farmer | 1 | 0.2 | - | - |
| Semi-skilled clerical, etc. | 28 | 6.3 | 1 | 2.4 |
| Semi-skilled manual | 2 | 0.4 | 1 | 2.4 |
| Unskilled clerical, etc. | 8 | 1.8 | - | - |
| Unskilled manual | 3 | 0.7 | - | - |
| Homemaker | 240 | 53.7 | 1 | 2.4 |
| Retired | 40 | 8.9 | 4 | 9.5 |
| Student | 4 | 0.9 | 3 | 7.1 |
| Not Applicable | 9 | 2.0 | 405 | - |
| **Education** | | | | |
| Some elementary or complete | 3 | 0.7 | 1 | 2.3 |
| Some jr. high or complete | 9 | 2.0 | 1 | 2.3 |
| Incomplete sr. high | 31 | 7.0 | 2 | 4.5 |
| Complete sr. high | 117 | 26.5 | 9 | 20.5 |
| Diploma or some university | 170 | 38.5 | 14 | 31.8 |
| Bachelors degree | 96 | 21.7 | 12 | 27.3 |
| Advanced or medical degree | 16 | 3.6 | 4 | 9.1 |

TABLE 6. PROFILE OF SUBJECTS: INTERVAL MEASURES

| Variable | Mean | Range | Standard Deviation |
|---|---|---|---|
| Age: Respondent 1 | 41.0 | 19-82 | 15.1 |
| Age: Respondent 2 | 38.6 | 14-78 | 15.7 |
| Years of Schooling: Respondent 1 | 13.9 | 6-22 | 2.5 |
| Years of Schooling: Respondent 2 | 14.5 | 6-22 | 2.8 |
| Experience Score: | 2.9 | 0-6 | 1.6 |
| Pre-test: Flammability | 1.4 | 0-5 | 1.1 |
| Pre-test: Serviceability | 1.5 | 0-5 | 1.2 |
| Post-test: Flammability | 2.6 | 0-5 | 1.3 |
| Post-test: Serviceability | 2.6 | 0-5 | 1.4 |

Over 70% of the second respondents (mostly males) were employed and included a larger percent of management and trade occupations.

Participants were distributed quite widely over education and income groups. There was also a wide range in both age and years of schooling.

Compared to 1982 Edmonton population data[6], subjects for this study included more homemakers, part-time workers and retired people and fewer full-time workers. The income and education distributions are quite similar to those for the Edmonton population, except that in each case there were fewer subjects in the lowest three categories and slightly more in the middle categories than for the population as a whole. The subjects' mean age and mean years of schooling were very close to those for the Edmonton population. Thus, the households in this study appear to be quite representative of the population, except that the very lowest socioeconomic group is not well represented. As it is doubtful that this group purchases much upholstered furniture, the subjects are reasonably representative of the population of interest for this study.

Table 6 also shows the mean scores and ranges for previous experience in purchasing upholstered furniture as well as for pre- and post-tests for upholstery flammability and general serviceability.

Since assignment of housholds to CE treatments was based on

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[6] From Edmonton Area Study, 1982: Frequencies, unpublished document available from Population Research Laboratory, University of Alberta (excerpts reproduced as Appendix H).

group membership and therefore not random, an analysis of the differences in the above variables among CE treatments was necessary. The results, summarized in Tables 7 and 8, indicate that the respondents assigned to different treatments varied on some of these factors. Closer inspection of the cross-tabulations on which the data in Table 7 are based, shows that the control group included more respondents that were working full-time than did any other treatment, while treatment 4 (presentation plus pamphlet) included more who worked part-time and treatment 2 (presentation) included a larger percentage of homemakers. The main difference in occupation among treatments was that treatment 3 (pamphlet) included a larger percentage of retired respondents. This is in keeping with the analysis of age differences, which shows that treatment 3 had the highest mean age while treatments 2 and 4 had the lowest.

Respondents in treatments 1 (control) and 3 (pamphlet) had higher scores than those in treatments 2 and 4 on both sets of pre-test questions.

Since these differences exist among respondents assigned to different CE treatments, they were accounted for in the testing of hypotheses reported below.

## DESCRIPTION OF DEPENDENT VARIABLES

### Cognition

Differences in post-test and pre-test scores for flammability and general serviceability are summarized as knowledge gain in Table 9, which also includes mean scores for each of the CE treatments. (The differences among treatments will be discussed

TABLE 7. ASSOCIATION OF RESPONDENTS' EDUCATION, EMPLOYMENT STATUS, OCCUPATION AND INCOME WITH CE TREATMENT

| Variable | Chi-Square | D.F. | Probability |
|---|---|---|---|
| Education | 4.81 | 6 | 0.568 |
| Employment Status | 27.47 | 9 | 0.001 |
| Occupation | 43.14 | 15 | 0.000 |
| Income | 23.16 | 30 | 0.809 |

TABLE 8. ANALYSIS OF DIFFERENCES AMONG CE TREATMENTS IN SCHOOLING, AGE, PRE-TEST SCORES AND EXPERIENCE

| Variable | F | D.F. | Probability of F |
|---|---|---|---|
| Years of Schooling | 0.727 | 3 | 0.536 |
| Age | 16.758 | 3 | 0.000 |
| Pre-test Flammability | 2.926 | 3 | 0.034 |
| Pre-test Serviceability | 2.941 | 3 | 0.033 |
| Experience Score | 0.177 | 3 | 0.912 |

TABLE 9. CHANGE IN KNOWLEDGE OF UPHOLSTERED FURNITURE FLAMMABILITY AND GENERAL SERVICEABILITY

| Score | Knowledge Gain Flammability (Frequency) | Knowledge Gain Serviceability (Frequency) |
|---|---|---|
| -4 | - | 1 |
| -3 | 2 | - |
| -2 | 11 | 11 |
| -1 | 38 | 53 |
| 0 | 113 | 98 |
| 1 | 106 | 120 |
| 2 | 95 | 89 |
| 3 | 57 | 49 |
| 4 | 23 | 23 |
| 5 | 1 | 3 |
| Total Sample--Mean | 1.12 | 1.06 |
| St'd Deviation | 1.45 | 1.48 |
| CE1: Control--Mean | 0.33 | 0.13 |
| St'd Deviation | 1.09 | 1.14 |
| CE2: Presentation--Mean | 2.08 | 1.74 |
| St'd Deviation | 1.25 | 1.44 |
| CE3: Pamphlet--Mean | 0.47 | 0.81 |
| St'd Deviation | 1.22 | 1.27 |
| CE4: Both--Mean | 1.86 | 1.83 |
| St'd Deviation | 1.33 | 1.36 |

later in the report.) The negative scores might be a result of respondents guessing correctly in the pre-test, even though they were asked to give a "don't know" response if they did not know an answer. Or, following exposure to educational material some respondents might have thought they should know the answer in the post-test, when in fact they had not really learned the material. The data illustrate, however, that most respondents increased their knowledge of upholstery flammability and serviceability.

The salience and importance of several upholstery fabric attributes are outlined in Table 10. The salience columns represent the number of respondents who mentioned an attribute when asked:

> "If you were actually buying fabric to reupholster this sofa/chair today, what characteristics would you be looking for in your choice of fabric, i.e. what properties would you want the fabric to have or not have?"

This free elicitation task took place just prior to the choice exercise. The importance columns represent the attributes mentioned by respondents during the actual choice exercise.

The physical attributes - color, aesthetics, tactile properties, fibre content and fabric construction - all increase in frequency when confronted with an actual choice situation. This probably reflects the effect of the visual stimulus provided by the fabric samples, even though an attempt was made by the researchers to use fabrics of similar construction and aesthetic appeal within both the casual and formal categories. On the other

TABLE 10. SALIENCE AND IMPORTANCE OF PRODUCT ATTRIBUTES IN CHOICE OF UPHOLSTERY FABRICS

| | Number (and Percent) of Respondents Mentioning Attribute | | | |
|---|---|---|---|---|
| | Respondent 1 | | Respondent 2 | |
| Attribute | Salience | Importance | Salience | Importance |
| Color | 160 (36) | 210 (47) | 10 (25) | 19 (42) |
| Aesthetics | 157 (35) | 250 (56) | 9 (23) | 27 (61) |
| Tactile | 47 (11) | 148 (33) | 4 (10) | 15 (34) |
| Durability | 374 (84) | 272 (61) | 15 (38) | 23 (52) |
| Ease of Care | 209 (47) | 106 (24) | 11 (28) | 7 (16) |
| Flame Retardance | 73 (16) | 57 (13) | 1 (3) | 3 (7) |
| Fibre Content | 41 (9) | 222 (50) | 1 (3) | 12 (27) |
| Fabric Construction | 112 (25) | 261 (58) | 1 (3) | 18 (41) |
| Miscellaneous | 120 (27) | 136 (30) | 6 (15) | 13 (30) |

hand, durability and flame retardance decrease in frequency for the primary respondents. These same two attributes increase for the second respondents but are still less important than for the primary respondents. In general in both situations, the second respondents mentioned fewer of the attributes than the primary respondents.

The total number of salient and important dimensions mentioned by the primary respondents and by the two respondents together, where applicable, are summarized in Table 11. The data for two respondents represent the number of different attributes mentioned (e.g. if both mentioned color, this attribute would only be counted once). The data clearly show that two persons together considered more attributes than did one person alone, especially in the actual choice exercise.

During the choice exercise, the interviewers recorded whether the respondents commented or asked about the special flammability or durability labels, seemed to look at them, or seemed to be unaware of them, as label awareness could be considered another measure of cognition. The effect of the various label (CI) treatments is summarized by CE treatment in Table 12. For all CE treatments, the three labels varied in the attention they received. Except for CE 4, the British label elicited more comments or questions than did the other labels. More subjects seemed to look at or read the labels in treatment 4 (UFAC plus durability), without commenting on them. The UFAC label by itself attracted little attention, perhaps a reflection of its design which requires the consumer to unfold it before it can be read.

TABLE 11. TOTAL NUMBER OF SALIENT AND IMPORTANT DIMENSIONS

| | Mean | Range | St'd Deviation |
|---|---|---|---|
| Respondent 1 (n=448) | | | |
| No. of Salient Dimensions | 2.89 | 1-7 | 1.19 |
| No. of Important Dimensions | 3.71 | 0-9 | 2.03 |
| Two Respondents (n=41) | | | |
| No. of Salient Dimensions | 3.42 | 1-7 | 1.18 |
| No. of Important Dimensions | 5.17 | 1-9 | 1.72 |

TABLE 12. THE EFFECT OF CE AND CI TREATMENTS ON AWARENESS OF FLAMMABILITY LABELS

| CI Treatment | Label Awareness CE1: Control | | | Label Awareness CE2: Presentation | | | Label Awareness CE3: Pamphlet | | | Label Awareness CE4: Both | | | Label Awareness (Entire Sample) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Comment or Ask | Look at | Unaware | Comment or Ask | Look at | Unaware | Comment or Ask | Look at | Unaware | Comment or Ask | Look at | Unaware | Comment or Ask | Look at | Unaware |
| UFAC | 0% | 10% | 90% | 19% | 11% | 70% | 15% | 22% | 63% | 20% | 8% | 72% | 13% | 13% | 74% |
| British | 39% | 6% | 55% | 46% | 8% | 46% | 22% | 11% | 67% | 33% | 11% | 56% | 35% | 9% | 56% |
| UFAC plus Durability | 20% | 46% | 34% | 23% | 54% | 23% | 14% | 54% | 32% | 35% | 30% | 35% | 22% | 46% | 31% |
| Total | 20% | 21% | 58% | 29% | 25% | 47% | 17% | 29% | 54% | 29% | 16% | 55% | 23% | 23% | 54% |
| n | 99 | | | 77 | | | 82 | | | 75 | | | 333 | | |
| Chi-square | 36.65 | | | 23.65 | | | 13.48 | | | 8.56 | | | 72.96 | | |
| d.f. | 4 | | | 4 | | | 4 | | | 4 | | | 4 | | |
| Significance | 0.000 | | | 0.0001 | | | 0.0092 | | | 0.0730 | | | 0.000 | | |

Respondents in CE groups 2, 3 and 4 were slightly more aware of the UFAC label than were those in the control CE group, however.

Choice

Responses to the 12 fabric alternatives presented in the choice exercise are summarized in Table 13, in terms of both frequency of actual choice and a "likelihood-to-buy" rating for each fabric. Rankings of the 12 fabrics on these two measures, although not identical, are quite similar.

Reasons given for choosing the selected fabric are summarized in Table 14. Durability and the aesthetic attributes (color, aesthetics, tactile properties) were given most frequently, with fabric construction also being mentioned by many subjects. These results are similar to the importance of attributes given in Table 10, except that the relative determinance[7] of flame retardance, fibre content and fabric construction, as reflected in these data, are all lower (Table 14).

Table 15 is a summary of the selected fabrics categorized according to flame retardance, durability and suitability for use. Given the fact that half of the fabrics were FR and half were not, the proportion of subjects choosing FR is not encouraging. It was thought that perhaps in households in which no one smokes, FR fabrics might have been chosen less often, partially accounting for the generally low number choosing FR. Cross-tabulations showed that although non-smokers were slightly more apt to choose non-FR fabrics than were smokers, this effect was not significant,

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[7] For a discussion of the question of salience vs importance vs determinance the reader is referred to Myers and Alpert (1977) and Heeler et al. (1979).

TABLE 13. UPHOLSTERY FABRICS: FREQUENCY OF SELECTION AND LIKELIHOOD TO BUY

| Fabric | Description | Frequency Selected | Rank | Liklihood to Buy (Possible Range: 1-10) Mean | St'd Dev | Rank |
|---|---|---|---|---|---|---|
| **Casual** | | | | | | |
| Donegal | FR; low durability (100% nylon tweed) | 47 | 4 | 4.37 | 3.26 | 8 |
| Homespun | Non FR; low (olefin/cotton tweed) | 14 | 10 | 3.42 | 2.67 | 10 |
| Harris | FR; medium (100% nylon tweed) | 12 | 12 | 3.11 | 2.46 | 11 |
| Corduroy | Non FR; medium (100% cotton corduroy) | 22 | 8 | 4.87 | 2.68 | 5 |
| Mirage | FR; high (nylon/modacrylic blend fabric) | 79 | 1 | 5.83 | 2.87 | 2 |
| Tempo | Non FR; high (acrylic/cotton pile fabric) | 41 | 5 | 4.78 | 2.88 | 6 |
| **Formal** | | | | | | |
| Slub | FR; low (100% polyester slub) | 28 | 7 | 3.74 | 2.88 | 9 |
| Flock | Non FR; low (flocked fabric; nylon pile; polyester/cotton background fabric) | 14 | 10 | 2.94 | 2.62 | 12 |
| Velvet | FR; medium (100% polyester velvet) | 18 | 9 | 4.64 | 2.82 | 7 |
| Splendor | Non FR; medium (acrylic/rayon/cotton textured velvet) | 67 | 2 | 6.09 | 2.80 | 1 |
| New Direction | FR; high (100% nylon velvet in a knit construction) | 64 | 3 | 5.59 | 3.03 | 4 |
| Centaur | Non FR; high (acrylic/cotton velvet) | 41 | 5 | 5.65 | 2.84 | 3 |

TABLE 14. REASONS GIVEN FOR CHOOSING SELECTED FABRIC

| Attribute | Number (and Percent) of Respondents Mentioning Attribute | | | |
|---|---|---|---|---|
| | 1st Reason | 2nd Reason | 3rd Reason | Total Mentions |
| Color | 39 (9) | 69 (15) | 42 (9) | 150 (33) |
| Aesthetics | 94 (21) | 69 (15) | 59 (13) | 222 (50) |
| Tactile | 58 (13) | 47 (11) | 24 (5) | 129 (29) |
| Durability | 111 (25) | 84 (19) | 58 (13) | 253 (56) |
| Ease of Care | 12 (3) | 35 (8) | 29 (7) | 76 (17) |
| Flame Retardance | 6 (1) | 10 (2) | 12 (3) | 28 (6) |
| Fibre Content | 33 (7) | 32 (7) | 21 (5) | 86 (19) |
| Fabric Construction | 61 (14) | 43 (10) | 36 (8) | 140 (31) |
| Miscellaneous | 33 (7) | 29 (7) | 28 (6) | 90 (20) |
| No Response | 1 - | 30 (7) | 139 (31) | 170 (38) |

TABLE 15. APPROPRIATENESS OF CHOSEN FABRIC

| | Frequency | Percent |
|---|---|---|
| FR or Not | | |
| Yes | 250 | 56 |
| No | 197 | 44 |
| Durability Rating | | |
| Low | 103 | 23 |
| Medium | 121 | 27 |
| High | 223 | 50 |
| Suitability for Intended Use | | |
| Less than Adequate | 141 | 32 |
| Adequate | 203 | 45 |
| More than Needed | 103 | 23 |

($p > .05$). Thus, the low number of subjects choosing FR fabrics cannot be attributed to the fact that non-smokers perceive less need for such.

A relatively large percentage of subjects chose a high durability fabric, considering that only one-third of the fabrics were rated as such. In addition, a majority chose fabrics that were either adequate for intended use (with respect to durability) or more durable than needed.

EFFECT OF DEMOGRAPHIC, SOCIOECONOMIC AND LIFESTYLE VARIABLES

The possible effect of intervening variables on the dependent measures is discussed here prior to the discussion of hypothesis testing. Where the CE treatments vary on any given variable, and if that variable is shown to be associated with any dependent measure, then it will be controlled for in the testing of hypotheses wherever possible.

The effect of possible intervening variables on the cognitive measures is summarized in Table 16, along with a review of the differences in such variables among the CE treatments. Level of education appears to be significantly associated with knowledge gain (FR) and the number of salient dimensions. Those with less than senior high school had knowledge gain scores much lower than other groups and mentioned fewer salient dimensions. Those with bachelors or higher degrees tended to mention more salient dimensions. Pearson correlation analysis indicates that age was negatively associated with both aspects of knowledge gain and positively associated with the number of important dimensions. All correlations are low, however. It was thought that the

Table 16. Effect of Demographic, Socioeconomic and Lifestyle Variables on Cognition

| Possible Intervening Variable | Effect on Dependent Variable | | | | Differences Among CE Groups |
|---|---|---|---|---|---|
| | Knowledge Gain: FR | Knowledge Gain: Serviceability | No. of Salient Dimensions | No. of Important Dimensions | |
| Income | F=1.34 | F=0.53 | F=1.07 | F=0.58 | $\chi^2$=23.16 (30d.f.) |
| Education | F=5.73** | F=0.10 | F=8.66*** | F=0.04 | $\chi^2$=4.81 (6d.f.) |
| Occupation | F=1.63 | F=1.18 | F=1.10 | F=0.20 | $\chi^2$=43.14*** (15d.f.) |
| Age | r=-0.263*** | r=-0.147*** | r=-0.011 | r=0.129** | F=16.76*** |
| Pre-test: FR | r=-0.475*** | r=-0.157*** | r=0.056 | r=0.074 | F=2.93* |
| Pre-test: Serviceability | r=-0.125** | r=-0.513*** | r=0.063 | r=0.076 | F=2.94 |
| Previous Experience | r=0.009 | r=-0.049 | r=-0.006 | r=0.069 | F=0.18 |
| Lifestyle: Good Houskeeper | r=0.012 | r=0.027 | r=0.045 | r=-0.024 | F=1.65 |
| Lifestyle: Economy Conscious | r=0.032 | r=0.007 | r=-0.019 | r=-0.009 | F=0.94 |
| Lifestyle: Leader | r=0.120** | r=0.034 | r=-0.092* | r=-0.056 | F=1.78 |
| Lifestyle: Fashion Conscious | r=0.078* | r=0.023 | r=0.062 | r=0.020 | F=0.69 |
| Lifestyle: Advice Seeker | r=-0.069 | r=-0.057 | r=-0.080* | r=-0.119** | F=2.20 |

* $p \leq .05$

** $p \leq .01$

*** $p \leq .001$

correlations between age and knowledge gain might possibly be attributed to differences in pre-test scores, but no significant associations between age and pre-test scores were found.

Pre-test scores were negatively correlated with knowledge gain, a finding which was to be expected since those with high pre-test scores could not increase their scores as much as those with lower pre-test scores.

The effect of possible intervening variables on measures of choice is summarized in Table 17. Both age and occupation affected suitability for use of the selected fabric. Respondents over 65 selected fabrics which are more durable than needed more often than younger subjects. This is in keeping with the same finding for the "retired" occupational category. In addition, full-time homemakers were most apt to select fabrics which were less than adequate for intended use. Upon further examination, these findings can be explained, at least in part, by the fact that the older retired subjects often needed only medium durability fabrics, while most of the young homemakers, with children still at home, needed high durability fabrics. Thus, the latter group usually could not have selected fabrics which were more durable than needed.

Five lifestyle factors were identified through factor analysis of the lifestyle items and are listed in Tables 16 and 17. Correlations between lifestyle scores and cognition measures are all very low even if statistically significant (Table 16). Respondents' scores in the "goodhousekeeper" factor were associated with choice of an FR fabric (Table 17); those who chose an

Table 17. Effect of Demographic, Socioeconomic and Lifestyle Variables on Choice

| Possible Intervening Variable | Effect on Dependent Variable | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Fabric Selected | FR or Not | Suitability for Use | Likelihood to Buy Fabrics: A/G | B/H | C/I | D/J | E/K | F/L |
| Income | $\chi^2$=42.64 (50d.f.) | $\chi^2$=7.68 (10d.f.) | $\chi^2$=17.65 (20d.f.) | F=0.55 | F=0.28 | F=1.18 | F=1.07 | F=1.20 | F=1.55 |
| Education | $\chi^2$=16.33 (10d.f.) | $\chi^2$=1.69 (2d.f.) | $\chi^2$=2.69 (4d.f.) | F=1.48 | F=0.05 | F=1.06 | F=3.84* | F=4.66** | F=2.04 |
| Occupation | $\chi^2$=25.35 (25d.f.) | $\chi^2$=1.91 (5d.f.) | $\chi^2$=25.20** (10d.f.) | F=0.32 | F=0.59 | F=1.65 | F=1.45 | F=0.99 | F=2.51* |
| Age | $\chi^2$=23.48 (25d.f.) | $\chi^2$=0.40 (5d.f.) | $\chi^2$=57.83*** (10d.f.) | r=-0.123** | r=-0.005 | r=0.182*** | r=0.001 | r=-0.066 | r=0.183*** |
| Pre-test: FR | $\chi^2$=10.66 (25d.f.) | $\chi^2$=1.47 (5d.f.) | $\chi^2$=11.52 (10d.f.) | r=0.032 | r=0.028 | r=-0.001 | r=-0.003 | r=-0.018 | r=0.033 |
| Pre-test Serviceability | $\chi^2$=20.50 (25d.f.) | $\chi^2$=4.49 (5d.f.) | $\chi^2$=6.70 (10d.f.) | r=-0.001 | r=-0.042 | r=-0.056 | r=-0.086* | r=-0.046 | r=0.758 |
| Previous Experience | $\chi^2$=25.30 (30d.f.) | $\chi^2$=5.86 (6d.f.) | $\chi^2$=15.07 (12d.f.) | r=0.004 | r=-0.019 | r=0.042 | r=0.038 | r=0.020 | r=0.075 |
| Lifestyle: Good Housekeeper | F=1.85 | F=5.07* | F=1.48 | r=0.064 | r=-0.104* | r=-0.039 | r=-0.046 | r=0.028 | r=-0.071 |
| Lifestyle: Economy Conscious | F=0.15 | F=0.04 | F=1.54 | r=0.014 | r=-0.047 | r=-0.026 | r=0.052 | r=-0.100* | r=0.047 |
| Lifestyle: Leader | F=1.16 | F=2.54 | F=0.59 | r=0.034 | r=-0.041 | r=0.052 | r=-0.014 | r=0.067 | r=0.046 |
| Lifestyle: Fashion Conscious | F=0.76 | F=0.01 | F=0.27 | r=-0.032 | r=-0.150*** | r=-0.110** | r=-0.057 | r=-0.005 | r=-0.020 |
| Lifestyle: Advice Seeker | F=0.41 | F=0.18 | F=1.28 | r=-0.062 | r=-0.047 | r=-0.053 | r=0.017 | r=-0.028 | r=-0.021 |

* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

FR fabric scored significantly higher on this lifestyle factor than those who chose a non-FR fabric.

Correlations between likelihood-to-buy ratings and each of age, previous experience, pre-test scores, and lifestyle scores are all very low, even if apparently significant (Table 17). Similarly, any of the apparently significant associations with level of education or occupation are not very meaningful when the patterns among educational levels and occupational groups are examined.

HYPOTHESIS TESTING

Hypothesis 1: Consumers exposed to different CE/CI strategies will not differ significantly in

a) knowledge gain;

b) number of salient or important dimensions considered; or

c) likelihood-to-buy each fabric type.

The research hypothesis was that CE treatments would vary in their effect on knowledge gain and number of salient dimensions, and that CE/CI strategies would vary in their effect on number of important dimensions and likelihood-to-buy.

The results of two-way analyses of covariance carried out to test null hypothesis 1.a are summarized in Table 18. Initial two-way analyses without covariates accounted for 31% of the variance for FR knowledge gain and 24% for serviceability knowledge gain. Since it was determined earlier that the CE groups varied on age and pre-test scores and that these variables were correlated with knowledge gain, they were included in the

TABLE 18. THE EFFECT OF CE AND CI TREATMENTS ON KNOWLEDGE GAIN: ANALYSIS OF VARIANCE

| | | Knowledge Gain Flammability | Knowledge Gain Serviceability |
|---|---|---|---|
| CE Effect | | F = 54.7<br>p = 0.00 | F = 41.7<br>p = 0.00 |
| CI Effect | | F = 1.6<br>p = 0.18 | F = 1.0<br>p = 0.42 |
| Interaction (CE x CI) | | F = 1.2<br>p = 0.27 | F = 0.1<br>p = 1.00 |
| Covariates | | | |
| Age (Resp. 1) | | F = 35.2<br>p = 0.00 | F = 3.3<br>p = 0.07 |
| Pre-test (FR) | | F = 157.8<br>p = 0.00 | |
| Pre-test (Serv.) | | | F = 187.7<br>p = 0.00 |
| Grand Mean | | 1.12 | 1.07 |
| CE Treatment: | Control | 0.40 | 0.22 |
| | Presentation | 1.96 | 1.70 |
| | Pamphlet | 0.60 | 0.89 |
| | Both | 1.72 | 1.68 |
| Multiple $R^2$ | | 0.48 | 0.45 |

analyses reported here. The variance accounted for has thus been increased to 48% and 44% respectively.

The data in Table 18 show that even after controlling for age and pre-test scores, the three CE treatment groups increased their scores on both flammability and serviceability knowledge more than the control group did. For flammability knowledge, the effect of the two presentation treatments (2 and 4) were much greater than that of the pamphlet. This difference, although present, was less marked for serviceability knowledge gain.

The slide-tape presentation was obviously effective in increasing knowledge, especially about upholstery flammability and flame retardance. For many, the slide-tape on flammability presented new ideas and information in an interesting and involving way. It is much more difficult to make an impression about textile flammability in a pamphlet. In addition, people may simply not read pamphlets as was the case for over one-third of the subjects receiving pamphlets in this experiment. This lack of attention to pamphlets is one reason for their often cited ineffectiveness. For neither aspect of knowledge gain did the pamphlet in treatment 4 add to changes brought about by the presentation alone (treatment 2).

In summary, hypothesis 1.a is rejected with respect to the effect of CE treatments.

The results of two-way analyses of variance used to test hypothesis 1.b are summarized in Table 19. CE treatments had no apparent effect on the number of salient dimensions mentioned by subjects in the free elicitation task prior to the choice

TABLE 19. THE EFFECT OF CE AND CI TREATMENTS ON NUMBER OF SALIENT AND IMPORTANT DIMENSIONS: ANALYSIS OF VARIANCE

| | Total Salient Dimensions | Total Important Dimensions |
|---|---|---|
| CE Effect | F = 0.47<br>p = 0.702 | F = 0.22<br>p = 0.880 |
| CI Effect | F = 0.34<br>p = 0.798 | F = 41.74<br>p = 0.000*** |
| Interaction | F = 0.43<br>p = 0.918 | F = 1.14<br>p = 0.332 |
| Grand Mean | 2.89 | 3.72 |
| CI Treatment: | | |
| Control | 2.84 | 4.54 |
| UFAC | 2.92 | 4.76 |
| British | 2.97 | 2.50 |
| UFAC plus Durability | 2.83 | 3.06 |
| Multiple $R^2$ | 0.006 | 0.222 |

*** $p < .001$

exercise. Likewise, cross-tabulations between CE and the salience and importance of each attribute indicated only one significant association: subjects in CE treatments 2 and 4 were less apt to mention aesthetics in the free elicitation task than were subjects in treatments 1 and 3 ($p < .01$).

CI treatments were not expected to have any effect on the number of salient dimensions since subjects had not yet been exposed to the various labels when the number of salient dimensions was measured. For important dimensions, however, when subjects were exposed to the various types of labels during the choice exercise, those in CI treatments 3 and 4 mentioned significantly fewer attributes. Apparently, both the British flammability label and the durability rating label reduce the number of important dimensions, perhaps by focusing subjects' attention on one or two important dimensions, possibly to the exclusion of others. In support of this explanation, cross-tabulations between CI and the importance of each attribute revealed a significant association ($p < .001$) between CI and importance of flame retardance. Subjects in treatment 3 (British label) were much more apt to mention flame retardance or flammability than were those in the other treatments. They were also less apt to mention several other attributes. There was no significant association between CI and the importance of durability, however, possibly because durability was already important to the majority of respondents regardless of the presence or absence of labels.

Thus, hypothesis 1.b is accepted for the effect of CE and CI on the number of salient dimensions and the effect of CE on the

number of important dimensions but rejected for the effect of CI on the number of important dimensions.

Results of two-way analyses of variance for hypothesis 1.c testing the effects of CE and CI treatments on the likelihood-to-buy each fabric (ungrouped) and each fabric type (grouped) are summarized in Table 20. There are some apparently significant CI effects. Most of these make intuitive sense in that when the data are examined more closely (in the second part of the table) they suggest that subjects in CI 3 (British label) are somewhat less likely to buy non-FR fabrics, and those in CI 4 (with durability labels) are less likely to buy low durability fabrics and more likely to buy the high durability fabrics. The results for fabric L and the FL combination illustrate that for CI treatment 4, the durability label seems to overshadow any effect the UFAC label might have in reducing likelihood to buy these non-FR, high durability fabrics. The results for fabric K, however, are anomalous in that subjects in treatments 2 and 3 were least likely to buy this FR fabric.

When one considers the small amount of variance accounted for in these analyses (as indicated by the multiple $R^2$ values), even the apparently significant findings may have little meaning. Thus, although one must reject hypothesis 1.c for some fabric types, the data illustrate that the effects of CI and especially CE treatments are small and not always clear.

Hypothesis 2: No significant association exists between exposure of respondents to different CE/CI strategies and

a) fabric chosen; or

b) appropratenes of selected fabric.

TABLE 20. THE EFFECT OF CE AND CI TREATMENTS ON LIKELIHOOD TO BUY EACH FABRIC

| Fabrics (not grouped) | CE Effect | | CI Effect | |
|---|---|---|---|---|
| | F | P | F | P |
| A | 1.061 | 0.365 | 1.861 | 0.135 |
| B[a] | 1.934 | 0.123 | 2.490 | 0.060 |
| C | 1.118 | 0.341 | 0.990 | 0.397 |
| D[a] | 1.252 | 0.291 | 2.759 | 0.042* |
| E | 0.941 | 0.421 | 0.270 | 0.847 |
| F | 0.054 | 0.984 | 1.637 | 0.180 |
| G | 0.058 | 0.982 | 1.883 | 0.132 |
| H | 1.586 | 0.192 | 1.898 | 0.129 |
| I | 0.120 | 0.948 | 0.077 | 0.973 |
| J | 1.112 | 0.344 | 1.954 | 0.120 |
| K[a] | 1.961 | 0.119 | 3.679 | 0.012* |
| L[a] | 2.359 | 0.071 | 3.775 | 0.011* |
| **Casual and Formal Fabrics Combined** | | | | |
| AG (FR; Low) | 0.553 | 0.646 | 3.685 | 0.012* |
| BH (Non FR, Low)[a] | 3.514 | 0.015 | 3.378 | 0.018* |
| CI (FR; Medium) | 0.851 | 0.467 | 0.685 | 0.561 |
| DJ (Non FR; Medium) | 0.154 | 0.927 | 3.757 | 0.011* |
| EK (FR; High) | 1.428 | 0.234 | 1.376 | 0.249 |
| FL (Non FR; High)[a] | 0.899 | 0.442 | 4.227 | 0.006** |

[a] see next page for further analysis

* $p < .05$

** $p < .01$

continued ...

TABLE 20 (Cont'd)

| Treatment Effects | Mean Likelihood to Buy | | | | | | |
|---|---|---|---|---|---|---|---|
| | Fabric B | Fabric D | Fabric K | Fabric L | BH Non FR Low | DJ Non FR Med | FL Non FR High |
| Grand Mean | 3.42 | 4.87 | 5.59 | 5.65 | 6.37 | 10.96 | 10.43 |
| CR: Control | 3.81 | 4.78 | 5.70 | 5.38 | 6.98 | 10.76 | 10.12 |
| Presentation | 3.01 | 4.76 | 5.66 | 6.16 | 5.52 | 11.10 | 10.94 |
| Pamphlet | 3.41 | 5.29 | 5.03 | 5.31 | 6.27 | 11.05 | 10.18 |
| Both | 3.33 | 4.65 | 5.97 | 5.86 | 6.53 | 10.98 | 10.59 |
| Multiple $R^2$ | 0.029 | 0.026 | 0.037 | 0.039 | 0.045 | 0.026 | 0.033 |
| CI: Control | 3.54 | 5.33 | 5.92 | 5.74 | 6.93 | 11.66 | 10.59 |
| UFAC | 3.90 | 4.79 | 4.85 | 5.33 | 6.84 | 10.93 | 10.07 |
| British | 3.26 | 4.34 | 5.52 | 5.20 | 5.82 | 9.89 | 9.53 |
| UFAC & Durability | 2.99 | 5.00 | 6.06 | 6.33 | 5.88 | 11.33 | 11.51 |
| Multiple $R^2$ | 0.029 | 0.026 | 0.037 | 0.039 | 0.045 | 0.026 | 0.033 |

Results of several chi-square analyses testing for association between CI and fabric chosen (hypothesis 2.a) are summarized in Table 22. To show any effect of CE treatments, separate analyses are reported for subjects from all CE treatments together and from each of the CE treatments.

Cross-tabulations were done for the four CI treatments, first with the 12 fabrics and then by combining the fabrics into six groups. Chi-square values for these two sets of analyses are reported in the first two columns in Table 21. Closer examination of the cross-tabulations suggested that the subjects in CI 3 (British label) tended to select the non-FR fabrics in all three durability categories least often, while those in CI4 (UFAC plus durability labels) tended to select the high durability fabrics most often. Thus, two further sets of analyses were conducted, first combining CI treatments 1, 2 and 4, and then combining treatments 1, 2 and 3. The results are summarized in the last two columns of Table 21.

The effect of CI 3 versus CI 1, 2 and 4 was not significant, while the effect of CI 4 versus the other CI treatments was. The durability label caused a significant shift in fabric choice to the high durability fabrics. This significant effect was noted for the combination of all CE treatments and also for CE treatment 2, but not for CE 1 and 3 while there was a trend toward this effect for CE 4.

Thus, on the basis of this last set of analyses, hypothesis 2.a can be rejected regarding the effect of both CE and CI on fabric chosen. The significant effect is related to the durability of fabric chosen, however, and not to flammability.

TABLE 21. THE EFFECT OF CE AND CI TREATMENTS ON FABRIC CHOSEN

| CE Treatment | CI Groups Not Combined | | CI Groups Combined; Fabrics Combined | |
|---|---|---|---|---|
| | Fabrics Not Combined (12 fabrics) (33 d.f.) | Fabrics Combined (6 groups) (15 d.f.) | CI 1, 2 and 4 vs CI 3 (5 d.f.) | CI 1, 2 and 3 vs CI 4 (5 d.f.) |
| All Together | $\chi^2 = 41.79$ $p = 0.140$ | $\chi^2 = 28.53$ $p = 0.019$* | $\chi^2 = 8.805$ $p = 0.117$ | $\chi^2 = 17.59$ $p = 0.004$** |
| Control | $\chi^2 = 22.68$ $p = 0.911$ | $\chi^2 = 9.71$ $p = 0.837$ | $\chi^2 = 4.54$ $p = 0.475$ | $\chi^2 = 4.50$ $p = 0.479$ |
| Presentation | $\chi^2 = 29.99$ $p = 0.466$ | $\chi^2 = 19.41$ $p = 0.196$ | $\chi^2 = 5.44$ $p = 0.364$ | $\chi^2 = 13.22$ $p = 0.021$* |
| Pamphlet | $\chi^2 = 23.01$ $p = 0.903$ | $\chi^2 = 8.19$ $p = 0.916$ | $\chi^2 = 1.11$ $p = 0.954$ | $\chi^2 = 4.97$ $p = 0.419$ |
| Presentation Plus Pamphlet | $\chi^2 = 30.37$ $p = 0.447$ | $\chi^2 = 21.87$ $p = 0.111$ | $\chi^2 = 5.57$ $p = 0.350$ | $\chi^2 = 10.81$ $p = 0.055$ |

* $p < .05$
** $p < .01$

Results of chi-square analyses of the effect of CI on appropriateness of selected fabric are summarized in Table 22 (hypothesis 2.b). Again, the effect of CE was determined by carrying out separate analyses for each CE treatment. Two measures of "appropriateness" were used - whether or not the fabric selected was FR, and the suitability of the selected fabric for intended use with respect to durability. (Information about intended use of the piece of furniture to be upholstered was obtained immediately following the choice exercise.)

With respect to choice of an FR fabric, no significant assocation was detected when CI treatments were not combined; however, when CI treatments 1, 2 and 4 were combined, significant effects were detected for all CE groups considered together. This cross-tabulation shows that for CI 3 (British label), 65% of subjects chose an FR fabric, compared to only 53% for all other CI treatments combined. This analysis is similar to that reported in the third column of Table 21, except that in Table 21, the fabrics were combined into six groups, while here they were combined into only two (FR or not). By combining the fabrics in this way, a significant effect of the British label was detected. This finding is in keeping with the association between CI and importance of FR discussed earlier. In fact, further cross-tabulations revealed significant associations ($p < .05$) between both salience and importance of FR and choice of an FR fabric.

Thus, hypothesis 2.b can be rejected regarding the effect of CI on choice of FR fabric.

Even when CI treatments are not combined, the effect of CI on

TABLE 22. THE EFFECT OF CE AND CI TREATMENTS ON APPROPRIATENESS OF CHOICE

| CE Treatment | FR or Not | | Suitability for Use | |
|---|---|---|---|---|
| | CI Not Grouped (3 d.f.) | CI 1, 2 and 4 vs CI 3 (1 d.f.) | CI Not Grouped (6 d.f.) | CI 1, 2 and 3 vs CI 4 (2 d.f.) |
| All Together | $\chi^2 = 5.65$<br>$p = 0.130$ | $\chi^2 = 4.31$<br>$p = 0.038$* | $\chi^2 = 29.42$<br>$p = 0.000$*** | $\chi^2 = 27.93$<br>$p = 0.000$*** |
| Control | $\chi^2 = 2.41$<br>$p = 0.493$ | $\chi^2 = 1.14$<br>$p = 0.285$ | $\chi^2 = 7.36$<br>$p = 0.289$ | $\chi^2 = 6.92$<br>$p = 0.032$* |
| Presentation | $\chi^2 = 1.38$<br>$p = 0.710$ | $\chi^2 = 0.39$<br>$p = 0.535$ | $\chi^2 = 16.89$<br>$p = 0.010$** | $\chi^2 = 14.21$<br>$p = 0.001$*** |
| Pamphlet | $\chi^2 = 0.19$<br>$p = 0.978$ | $\chi^2 = 0.01$<br>$p = 0.907$ | $\chi^2 = 5.57$<br>$p = 0.473$ | $\chi^2 = 2.42$<br>$p = 0.298$ |
| Presentation Plus Pamphlet | $\chi^2 = 4.02$<br>$p = 0.259$ | $\chi^2 = 2.77$<br>$p = 0.096$ | $\chi^2 = 11.99$<br>$p = 0.062$ | $\chi^2 = 8.35$<br>$p = 0.015$* |

* $p < .05$
** $p \leq .01$
*** $p \leq .001$

suitability for intended use of the selected fabric is significant for all CE treatments together as well as for CE treatments 2 and 4 (Table 22). When CI treatments 1, 2 and 3 are combined, the effect of CI 4 on suitability is also significant for the control group. The actual cross-tabulations are shown in Table 23 for the total sample and CE treatments 2 and 4. For all three cross-tabulations, subjects in CI 4, who were exposed to the durability rating label, selected fabric adequate for their needs more often than subjects in the other treatments, and less frequently selected fabrics which were either less than adequate or more durable than needed.

It is interesting to note that for CE 3 (pamphlet only) there is no significant association between CI treatment and suitability for use. This might possibly be explained by the fact that this CE group included a relatively high number of older retired subjects who tended to select fabrics which were more than adequate for their needs (see page 47).

In summary, hypothesis 2.b can be rejected with respect to the effect of CI on suitability for intended use of the selected fabric. The effect of CE if any, however, is unclear.

TABLE 23. CROSS TABULATIONS: EFFECT OF CE AND CI TREATMENTS ON SUITABILITY FOR INTENDED USE

| CE Treatment | CI Treatment | SUITABILITY FOR USE | | |
|---|---|---|---|---|
| | | Less than Adequate | Adequate | More than Needed |
| Total Sample | 1,2,3 | 124 (37%) | 129 (39%) | 82 (24%) |
| | 4 | 17 (15%) | 74 (66%) | 21 (19%) |
| CE 2 | 1,2,3 | 25 (33%) | 30 (39%) | 21 (28%) |
| | 4 | 1 (4%) | 21 (81%) | 4 (15%) |
| CE 4 | 1,2,3 | 35 (43%) | 29 (36%) | 17 (21%) |
| | 4 | 5 (22%) | 16 (69%) | 2 (9%) |

# SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The overall objectives of the research were to design and test strategies for the provision of consumer information and education on textile product safety using the example of upholstered furniture.

## CE/CI STRATEGIES: EXPERIMENTAL DESIGN

In order to achieve these objectives the researchers first developed several strategies combining consumer information and consumer education on the subjects of upholstered furniture and textile flammability. An experimental design was developed to test these strategies. Four consumer information (label) treatments were designed for use in an in-home choice experiment. Prior to the in-home choice exercise subjects in the experiment were exposed to one of four consumer education treatments.

The experiment was designed to measure the effect of different strategies on:

a) consumers' awareness and understanding of textile flammability and related issues; and

b) consumers' evaluations of and choice among selected pieces of upholstered fabric which varied on flammability attributes.

Thus, various measures of cognition and choice were taken as dependent variables.

## COGNITION

With respect to cognitive measures, the findings of the study have shown a differing effect of various CE treatments on knowledge gain. The slide-tape presentation had the greatest

effect on flammability knowledge, while in treatment 4, the addition of the pamphlet did not seem to improve the effectiveness of the presentation.

To date, most consumer education materials on textile flammability have been in pamphlet form, while this study clearly shows the slide-tape presentation to be more effective. The sequences used were designed in such a way that they could be broken into smaller segments for television viewing. Video-tapes would likely be even more effective, given the action-oriented nature of the message.

Of the two flammability labels used in the study, subjects were more aware of the British label than the UFAC label. The British label uses a standard, recognized visual symbol - a red warning triangle. It is simple, has limited text using only key words, and highlights one of the many hazards - the cigarette. Only a few seconds are necessary for a consumer to recognize and comprehend its message. The UFAC label, on the other hand, uses a less compelling visual symbol, needs to be unfolded to be read and has a lengthy message. The message likewise, is not compelling; it provides information but does not attempt to affect a consumer's attitude toward flame retardance.

Consumer education did not seem to have an effect on the salience or importance of FR as a product attribute. On the other hand, FR was mentioned more often during the choice exercise by respondents exposed to the British label. This is in keeping with the above discussion of label awareness.

ATTITUDES AND CHOICE

Although the effects of CE and CI on product evaluation as reflected in the "likelihood-to-buy" ratings were not clear, there was a tendency for the British warning label to lead to a more negative evaluation, and thus less likelihood to purchase, non-FR fabrics. This effect was somewhat more clear in some measures of choice. The British warning label tended to act to discourage selection of non-FR fabrics whereas UFAC labels did not necessarily act as encouragement to select FR fabrics.

The durability label, although very useful in selecting an appropriately durable fabric, appears to reduce the effectiveness of the UFAC label even further. Unfortunately, the durability label was not combined with the more effective British label, so one cannot conclude for certain that it would have the same effect in such a combination. One might safely assume, however, that a high durability rating might have more effect on choice than would a flammability warning label on the same fabric or piece of furniture given the greater importance to consumers of durability over flame retardance. This assumption is supported by others' findings that information affects choice on an important attribute (Nourse and Anderson, 1973; Crosby and Grossbart, 1981). If the voluntary use of such durability rating labels is to be encouraged, then less impact might be expected from any flammability label on the same product.

Thus, CI was found to affect choice with respect to both durability and flammability. The effect of CE on choice, however, was more significant in the area of durability than flammability

or flame retardance. This is in keeping with the finding that durability was a more important attribute in choice than was flammability.

Although CE was found to significantly affect knowledge gain, none of the CE treatments appeared to affect the salience or importance of FR; therefore it is not surprising that they did not yet affect choice of an FR fabric. It should be remembered, however, that the consumer education treatments used here involved only a single exposure. Since all had some affect on knowledge gain, especially those including an audio-visual presentation, repetition should eventually affect attitude toward FR and thus choice.

EFFECT OF DEMOGRAPHIC, SOCIOECONOMIC AND LIFESTYLE VARIABLES

Of all the possible intervening variables considered in this study, age seemed to have the most effect on the variables measured. Older respondents tended to gain less knowledge, mention more product attributes during the choice exercise and select fabrics that were more than adequate for their needs. Level of education also affected both knowledge gain and the number of salient dimensions. The lifestyle measures used in this study did not yield any meaningful relationship with cognitive or choice measures.

When intervening variables were controlled for in the testing of hypotheses the conclusions reached regarding the effect of consumer education and information were the same as for analyses without such controls.

## CONCLUSIONS AND IMPLICATIONS

Conclusions from the study and implications for policy can be summarized as follows:

1. For most consumers flammability or flame retardance was not a determining factor in choice of upholstery fabric/upholstered furniture.
2. Flame retardance was <u>not</u> more important to smokers than to non-smokers.
3. The importance of flammability/flame retardance was increased for those consumers exposed to the British warning label during the choice exercise. Likewise, subjects exposed to the British label actually chose an FR fabric more often than did subjects in the other label treatments. However, of the consumers in the British label treatment, 35 percent still chose a non-FR fabric, even though half of the fabrics were FR. Thus, for many consumers, the information provided even by the British label did not increase the importance of flammability/flame retardance to the point where they would select an FR fabric voluntarily.
4. The UFAC label did not encourage choice of an FR fabric. The addition of durability rating labels reduced the effectiveness of the UFAC labels even further, as durability was a much more important attribute to subjects than was flame retardance. Thus, the concurrent use of other labels, such as the durability labels used in this study, is likely to limit the effectiveness of any flammability labelling program.
5. Although each of the consumer education treatments brought

about an increase in knowledge of upholstery flammability, the audio-visual presentation was more effective than the pamphlet in doing so. It also had more effect on subjects' awareness of both the UFAC and British labels. The addition of the pamphlet in CE treatment 4 did not improve the effectiveness of the presentation. This finding, in conjunction with the greater effect of the British label over the UFAC label, illustrate the relative impact of visual stimulii over textual material for both CI and CE.

6. The single exposure consumer education treatments used in this study did not effect a change in consumer behavior regarding choice of an FR fabric. Since all treatments effected a knowledge gain, however, the "hierarchy of effects" theory suggests that repeated efforts over the long term should eventually affect attitude toward FR. As an association was found between importance of FR and choice of an FR fabric, such a long-term education program could eventually bring about more voluntary choice of FR furniture.

It should be emphasized, however, that immediate effects should not be expected from any educational program. At the present time flammability is important to a very small proportion of consumers. The complexity of any educational program and the time required to bring about a significant change in attitude and/or behavior suggest that such a program would be costly and require a long-term commitment, if it is to be successful even in the long run.

7. In evaluating the effectiveness of consumer education, the effects of age and educational level of subjects should also be considered. Older consumers in this study responded less well to consumer education than did younger ones. This suggests that CE programs would be more effective if aimed at younger consumers or even perhaps at children, although children were not included in this study. (The time required to realize results in terms of consumer behavior would be even longer if children were the target of CE programs.)

   Subjects with the least education were also the least affected by consumer education. If these are the same people who are most at risk for upholstery fires, then the success of consumer education alone in reducing deaths and injuries due to upholstered furniture fires would be even lower than discussed above.

RECOMMENDATIONS

The following recommendations regarding upholstered furniture flammability standards and/or labelling follow from the above conclusions:

1. A mandatory standard/regulation would be more effective than a voluntary standard in reducing upholstered furniture fires. In order for a voluntary standard to be effective, almost complete compliance would be necessary, as many consumers will not voluntarily select FR furniture, even when provided with warning labels such as prescribed in the pre-1982 British regulations. Thus an upholstered furniture regulation involving a mandatory standard is recommended.

2. Although a mandatory standard might be more costly to implement than a voluntary one, such cost should be weighed against the costs of any long-term educational program which would be necessary to improve the effectiveness of a voluntary standard.

3. If a completely mandatory standard is not feasible, a regulation similar to the U.K. Upholstered Furniture (Safety) Regulations 1980, in place prior to December 1982, requiring that furniture not meeting a flammability standard bear a warning label, would be more effective than a program similar to that of UFAC where only furniture which complies with the voluntary standard is labelled.

5. For a large majority of consumers, flammability/flame retardance is not an important attribute in choice of upholstered furniture. Flame retardance must be more important before consumers will choose it voluntarily. Such an attitude change can only be brought about by reinforcement and repetition. If voluntary choice is a long-term goal, a long-term commitment to consumer education programs is therefore required to change consumer attitudes.

6. If a consumer education program is being contemplated, to accompany either a mandatory or a voluntary standard, funds for such a program, at least initially, would be most effectively directed toward a series of short television sequences on the subject. These could be repeated several times in the next few years.

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## Appendix A

Explanatory Letters and
Consent Form

Note: The following are sample letters on University of Alberta letterhead sent to groups and individual participants in Edmonton. The same letters, on University of Manitoba letterhead were sent to Winnipeg groups and participants.

APPENDIX A

403 • 432·3824

FACULTY OF HOME ECONOMICS
THE UNIVERSITY OF ALBERTA • EDMONTON, CANADA • T6G 2M8

I am writing to seek the cooperation of your group in a research project. In cooperation with Dr. Sheila Brown of the University of Manitoba, I am studying the effect of consumer information on consumer choices. The study is sponsored by Consumer and Corporate Affairs Canada.

The purpose of this study is to determine what types of information would be most helpful to consumers in selecting upholstered products such as sofas and chairs.

In order to do this we would like to ask members of your group to participate in the study. We will pay your group $2 for every household participating. Participation will include:

1. completion of a brief 5 minute quiz on upholstered furniture; and
2. an in-home appointment taking about 30-40 minutes in which participants will be asked their preferences about furniture and asked to choose a fabric from a set of swatches. Each household will have their names entered into a draw with a chance to win the fabric they have chosen to reupholster a sofa and/or chair.

In addition to this chance to win a prize, and our financial contribution to your organization, we would be pleased to give an informative audio-visual presentation on selecting upholstered furniture to your group following completion of the project.

I will telephone you in a week's time to discuss your group's interest in participating. In the meantime if you need any further information please feel free to call me at 432-2474.

Sincerely,

Betty Crown, Ph.D.
Associate Professor and Chairperson
Clothing and Textiles Department

BC:dlp

APPENDIX A

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FACULTY OF HOME ECONOMICS
THE UNIVERSITY OF ALBERTA • EDMONTON, CANADA • T6G 2M8

I am writing to seek the cooperation of your group in a research project. In cooperation with Dr. Sheila Brown of the University of Manitoba, I am studying the effect of consumer information on consumer choices. The study is sponsored by Consumer and Corporate Affairs Canada.

The purpose of this study is to determine what types of information would be most helpful to consumers in selecting upholstered products such as sofas and chairs.

In order to do this we would like to ask members of your group to participate in the study. We will pay your group $2 for every household participating. Participation will include:

1. attendance by the group at an informative audio-visual presentation on upholstered furniture, taking about 20-30 minutes, plus questions and answers. This presentation will take place some time in February.
2. completion of a brief 5-minute quiz on upholstered furniture; and
3. an in-home appointment taking about 30-40 minutes in which participants will be asked their preferences about furniture and asked to choose a fabric from a set of swatches. Each household will have their names entered into a draw with a chance to win the fabric they have chosen to reupholster a sofa and/or chair.

In addition to this chance to win a prize, and our financial contribution to your group, we are sure that your members would find participation in the project interesting and informative.

I will telephone you in a week's time to discuss your group's interest in participating. In the meantime if you need any further information please feel free to call me at 432-2474.

Sincerely,

Betty Crown, Ph.D.
Associate Professor and Chairperson
Clothing and Textiles Department

BC:dlp

APPENDIX A

403 • 432•3824

FACULTY OF HOME ECONOMICS
THE UNIVERSITY OF ALBERTA • EDMONTON, CANADA • T6G 2N8

Dear Consumer:

Thank you for agreeing to participate in this research project. Your participation will include:

(i) completion of the attached brief questionnaire today and returning it in the enclosed postage-paid envelope; and
(ii) an appointment in your home, when you will be asked to imagine you are selecting fabric to reupholster some sofa or chair already in your home. This appointment should take no more than one hour of your time.

You are reminded that your participation in any part of the study is voluntary and that you may withdraw at any time. All reponses will be treated confidentially - your name will in no way be associated with any of the information collected.

For your participation, _____ of which you are a member, will be paid $2.00. In addition, your name will be entered into a draw for the fabric you choose when we meet with you in your home.

Please sign the consent form below and return it with the completed pre-test.

Sincerely,

Betty Crown, Ph.D.
Associate Professor and Chairperson
Clothing and Textiles Department

Kathryn Chandler
M.Sc. Candidate and Research Assistant

---

I/We _____ agree
name(s) - please print

to participate in the research project on choosing upholstery fabric, including a choice exercise in my/our home.

Signature(s) _____ Address _____

_____

Phone No. _____

B-CT3505-6

APPENDIX A

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FACULTY OF HOME ECONOMICS
THE UNIVERSITY OF ALBERTA • EDMONTON, CANADA • T6G 2M8

Dear Consumer:

Thank you for agreeing to participate in our research project. Your participation will include:

(i) completion of a very brief questionnaire which we will deliver to your home; and
(ii) an appointment in your home, when you will be asked to imagine you are selecting fabric to reupholster some sofa or chair already in your home. This appointment should take no more than one hour of your time.

You are reminded that your participation in any part of the study is voluntary and that you may withdraw at any time. All responses will be treated confidentially - your name will in no way be associated with any of the information collected.

For your participation, _____ of which you are a member, will be paid $2.00. In addition, your name will be entered into a draw for the fabric you choose when we meet with you in your home.

Please sign the consent form below. We will contact you by telephone to make an appointment.

Sincerely,

Betty Crown, Ph.D.
Associate Professor and Chairperson
Clothing and Textiles Department

Kathryn Chandler
M.Sc. Candidate and Research Assistant

---

I/We _____ agree
name(s) - please print

to participate in the research project on choosing upholstery fabric, including a choice exercise in my/our home.

Signature(s) _____ Address _____

_____

_____

Phone No: _____

APPENDIX A

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FACULTY OF HOME ECONOMICS
THE UNIVERSITY OF ALBERTA • EDMONTON, CANADA • T6G 2M8

Dear Consumer:

As part of the project that you have agreed to participate in we are sending you this informative brochure. We hope you find it interesting.

Sincerely,

Betty Crown, Ph.D.
Associate Professor and Chairperson
Clothing and Textiles Department

BC:dlp
Encl:

## Appendix B

**Script for Upholstered Furniture:**
**Serviceability Presentation**

SLIDE TAPE

FABRIC SERVICEABILITY

| TEXT | SLIDES |
|---|---|
| Selecting upholstered furniture can be an exciting yet mindboggling task. Of the many things that should be considered when choosing furniture, the serviceability of the upholstery fabric is one of the most important. | 1. title "Upholstered Furniture: Fabric Serviceability". |
| The serviceability of an upholstery fabric is largely determined by both fiber content and fabric construction. | 2. list: fiber content, fabric construction. |
| This chart outlines two properties of fibers commonly used in upholstery fabrics. Note how the fibers vary in their ability to withstand wear. Nylon has excellent resistance to wear while rayon and acetate have poor resistance. | 3. chart. |
| Thick fabrics, close weaves and tightly twisted yarns as illustrated here, result in better overall durability of an upholstery fabric. | 4. examples of thick fabrics close weaves, tightly twisted yarns. |
| A thick cotton and rayon blend fabric for example can be more durable than a thin flimsy nylon even though the nylon is a stronger fiber. | 5. example of a thick cotton/rayon and a thin flimsy nylon. |
| The fabric should feel substantial. Hold a sample up to the light, as has been done in this slide, and note how easily you can see through the fabric. Cotton prints, such as the navy blue floral in the upper row, are often thin, resulting in poor resistance to wear because there is so little fabric to wear through. | 6. contrast firm thick fabrics with thin fabrics when held up to the light. |
| Coatings are found on the majority of upholstery fabrics on the market. The fabrics shown in this slide have coatings and the coated side is easily distinguished from the right side of the fabric. | 7. examples of coated fabrics. |
| Coatings are used to: prevent smooth yarns from slipping and unravelling, give the fabric additional body and stiffness, stabilize yarns against shrinkage, and minimize dirt and stain penetration into the fabric and stuffing. | 8. list. |
| Be cautious, however, of an overly thick coating which tends to be stiff and often camouflages an inferior fabric. The coating can peel and crack from use and wear as shown in this slide. | 9. overly thick backing. |

When the coating is totally or partially lost, a loosely woven fabric shreds because the loose weave is no longer held in place. This type of problem is very common with less expensive olefin and olefin-blend fabrics as shown in this slide.

10. cover fabric shredding.

Loosely woven fabrics, fabrics with fancy yarns and fabrics with floating yarns, as shown here, are prone to snagging. Snagging contributes to decreased wear and loss of surface appearance.

11. examples of snagging on such fabrics.

Fabrics which have yarns that are more pronounced than others or which have raised surface designs will encounter problems with uneven wear. The raised surfaces and pronounced yarns will wear out faster.

12. examples of such fabrics.

With pile fabrics such as velvet or corduroy, note the type of fiber composing the pile. It is the fiber that will receive the most abrasion. The denser the pile, the longer the wear life. Short dense pile resists crushing and matting extremely well.

13. pile fabrics.

When choosing a pile upholstery fabric pick gently at the pile; the pile should not be easy to pull out or snag. The velvet shown here is of poor quality because the pile is so easily removed.

14. picking at pile.

Flocked fabrics, though they resemble pile fabrics in appearance and feel, are made very differently. Small fiber particles are sifted and then attached with an adhesive to the surface of a background fabric, as illustrated in this slide.

15. diagram of flocked fabric production.

Flocked fabrics are found mainly in less expensive furniture because they are less costly to produce than true pile fabrics. They are, however, not as durable. This slide contrasts the abrasion resistance of a flocked fabric and a true pile fabric like velvet. Note the complete loss of pile in certain areas of the flocked fabric while the velvet shows only minimal signs of wear. With flocked fabrics the pile can loosen from the adhesive and rub off. As well, the adhesive can break down over time or during cleaning, thus releasing the pile. Bare patches can result.

16. contrast abrasion resistance of pile vs flocked fabric.

If considering a flocked fabric, scratch the surface of the fabric with your fingernail. If fibers come off or if the surface appearance of the fabric is altered permanently, as in this slide, the fabric may not be as durable as desired.

17. scratching the pile.

Heavily ribbed fabrics such as the ones shown here are subject to uneven wear and fabric splitting.

18. examples of heavily ribbed fabrics.

The fine lengthwise yarns in such fabrics cannot withstand wear as well as the thick crosswise yarns, causing the fabric to split horizontally. The floating lengthwise yarns may also catch, snag and break. Fabrics with such an unbalanced construction should be avoided.

19. close up of ribbed fabric.

Pilling is the formation of little balls of fibers on the surface of a fabric, as shown here, and it is caused by abrasion in wear. Pilling contributes to a worn appearance.

20. pilling.

Pilling occurs more readily with synthetic fibers and the balls are often difficult to remove. Fabrics such as the ones here, are often susceptible to pilling. To test for pilling you can pull gently at the yarns, noting if any loose fiber ends become exposed. Rub these around and they may form a ball.

21. examples of fabrics that tend to pill.

Natural leather should be examined carefully. The hides should be of uniform thickness and pliability throughout.

22. setting of leather furniture.

Leather used for upholstery has a finish applied to it. The finish protects against soiling and scuffing. To test the permanence of the finish, scratch with your fingernail - no whitish streaks should remain. Although the initial cost of leather upholstery may be high, the wear-life is long.

23. poor finish.

Vinyls are available in expanded and non-expanded forms. Expanded vinyls include a layer of foam between the surface vinyl sheet and the fabric backing as illustrated here. These remain pliable for a longer time than do the non-expanded types.

24. diagram of expanded vinyl.

Non-expanded vinyls have no foam layer. They consist of a fabric backing and a vinyl sheet generally held together with adhesive. These vinyls often are quite stiff, do not mold easily around corners, show sharp creases and develop cracks more readily than expanded vinyls.

25. diagram of non-expanded vinyl.

Knit backings such as in this slide add strength and pliability to vinyls.

26. knit backing.

Though vinyls are very tough, they will tear or split if pierced with a sharp object. They may also be damaged by solvents found in many products, such as some household cleaners, nail polish remover and shoe polish.

27. tear, solvent damage.

By considering the things mentioned in this presentation it is possible to choose upholstery fabric that will wear well and look good for many years.

28. furniture setting.

## Appendix C

**Script for Upholstered Furniture:**
**Flammability Presentation**

SLIDE TAPE

FLAMMABILITY

| TEXT | SLIDES |
|---|---|
| Protection of the home and of family members is a primary concern for most people. | 1. family group. |
| Did you know that most injuries involving burns and inhalation of smoke and toxic fumes occur in the home, and most of these involve bedding or upholstered sofas and chairs. | 2. title: "Upholstered Furniture: Flammability" with attention-getting photo of actual sofa burning. |
| It has been estimated that ignition of upholstered furniture accounts for 11 to 15% of all fire deaths in Canada and 2 to 3% of all fire property losses, more than any other product. | 3. collage of news clippings. |
| In an actual fire involving furniture, the ease of ignition and subsequent course of the fire are determined not by any one particular material on its own, but by the combination of materials used in the upholstery, the design of the furniture, and by the environment around the furniture. | 4. outline factors. |
| This slide shows a selection of typical upholstery fabrics. It is important to note that the fabric cover plays an extremely important role both in the initial ignition stage and in what follows when smoke and gases are given off. | 5. examples of upholstery fabrics. |
| Fibers differ in their ability to resist heat and flame. After a flame is withdrawn, some fabrics continue to burn readily, as the cotton and rayon blend fabric in this slide. | 6. cellulosic burning. |
| Other fabrics, such as the synthetic in this slide, melt, often producing drips of molten plastic-like residue. | 7. olefin burning. |
| And there are still other fabrics that extinguish on their own, as shown here. Most wool fabrics will self-extinguish and thus have good flame-resistance. | 8. wool burning. |

Flame-resistant, however, does not mean flame-proof. No fiber commonly used in upholstered furniture is flame-proof. This chart outlines the flame-resistance of various fibers. Wool and nylon tend to be more flame-resistant than the other fibers. Cellulose fibers, like cotton and rayon, are least flame-resistant.

9. chart.

There are some fibers, particularly synthetics, that are not highly flammable but that melt readily. Olefin is one such fiber. It melts at a very low temperature so may be a poor choice for people who smoke. This slide shows a cigarette burn on a typical olefin upholstery fabric. The heat from a smoldering cigarette alone was enough to melt a hole through the fabric.

10. cigarette burn on olefin fabric.

In upholstered furniture flaming combustion is often less of a problem than is smoldering. When a covering fabric ignites readily, the cushioning or stuffing material is apt to ignite and continue to smolder over a long period, giving off smoke and/or fumes. If the covering fabric does not readily ignite, or if it self-extinguishes, the stuffing material may not ignite and such smoldering will not occur.

11. smoldering fire.

Furniture with an easily ignited cover fabric can be made with a flame-resistant barrier fabric between the outer fabric and the cushioning material, thus protecting the cushioning even if the outer material catches fire. Such a construction is illustrated here, but it is not yet commonly available to the Canadian consumer because of increased cost.

12. diagram.

Polyurethane is the most common synthetic foam used in upholstered furniture. This slide shows samples of various types and densities of polyurethane foams.

13. foam samples.

Polyurethane ignites readily, burns rapidly and gives off toxic fumes. Foams have been developed that have increased flame-resistance but they are expensive and are not readily available to consumers.

14. combustion of polyurethane foam.

Furniture design influences flammability as well. Vertical surfaces such as those on the left, burn about three times as fast as horizontal surface, shown here on the right.

15. examples of vertical and horizontal furniture designs.

Narrow crevices that are capable of trapping cigarettes and other burning materials should be avoided where possible. This slide shows typical cigarette traps in a piece of upholstered furniture.

16. example of cigarette trap.

Hollow spaces between the fabric cover and the foam construction, such as the one shown here, are also undesirable since they help flames to spread.

17. hollow space.

Finishes can be applied to both fabrics and foam that would normally have poor flame-resistance. This slide shows the burning of a cotton upholstery fabric that does not have a finish. The fabric burns readily.

18. cotton without finish burning.

This slide, on the other hand, shows burning of the very same fabric but this time the fabric has been given a flame-retardant finish. The rate of combustion is reduced significantly, so that only a few glowing embers remain at the lower edge of the fabric. Some flame-retardant finishes are removed by cleaning and must be re-applied after cleaning. At present these finishes are applied commercially.

19. cotton with finish burning.

Much of the furniture produced and sold in the United States is tested voluntarily by manufacturers. Furniture which meets voluntary flammability standards will bear the label shown here.

20. UFAC label.

In Britain, labels are used to indicate resistance to cigarettes and small flame ignition. The label on the right is an example from the British labelling system. In the future, Canada will likely adopt flammabilty standards for upholstered furniture so be on the lookout for labels regarding compliance with such standards.

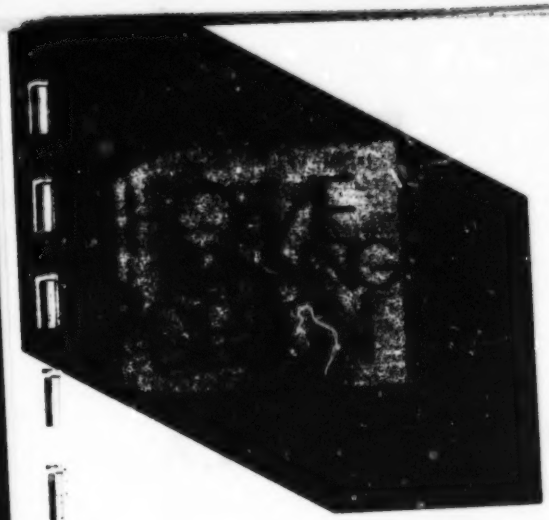
21. British label.

By buying safer furniture and being cautious with cigarettes you can help to protect your home and family.

22. family group. (same as for #1)

## Appendix D

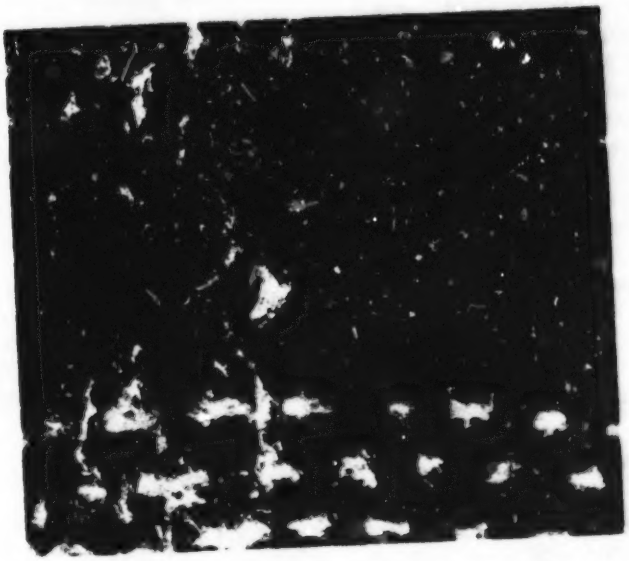
Pamphlet



FACT SHEET

# UPHOLSTERY FABRICS

## Homedex 1774—40



## 1. SELECTING UPHOLSTERY FABRIC

**There's more to selecting upholstered furniture than meets the eye; some of the most attractive pieces of furniture can be the poorest performers.** Making an appropriate choice involves careful consideration of numerous factors. This brochure is intended to acquaint the reader with these factors and provide information which will be useful in making a decision.

**Prepared for the Home and Community Design Branch**
**by Kathryn Chandler**
**Faculty of Home Economics**
**University of Alberta**

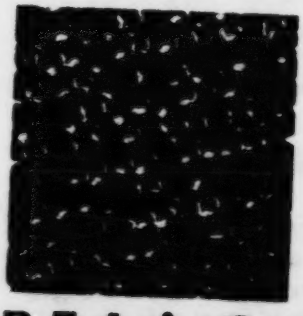
Alberta AGRICULTURE

# A. Fibre Content

The characteristics of a fibre contribute greatly to the ultimate serviceability of an upholstery fabric. **Fibres vary in their ability to withstand wear.** The chart outlines properties of fibres commonly used in upholstery fabrics.

Evaluation under each heading applies to the individual fibre only. Fabrics that are blends of two or more fibres will exhibit a combination of the properties of the component fibres. The evaluations indicate average performance. Actual performance will also depend upon such factors as fabric construction and use conditions.

Evaluations under the headings durability/wear life, and abrasion resistance correspond in a general way with the following use conditions: **Very Good to Excellent** — suitable for normal use by an active family with children.
**Good** — suitable for normal use by adults in a household.
**Poor to Fair** — suitable for use by adults in a household where furniture is not in constant use.



# B. Fabric Construction

**Thicker fabrics, closer weaves, and tightly twisted yarns result in better overall durability of an upholstery fabric.** Resistance to abrasion and wear are of primary concern when selecting upholstery fabrics. Firmness of the fabric is the most important factor in durability. A thick cotton/rayon fabric for example can be more durable than a thin flimsy nylon, even though the nylon is a stronger fibre. The fabric should feel substantial. Hold a sample up to the light and note how easily you can see through the fabric. Cotton prints are often thin, resulting in poor abrasion resistance because there is so little fabric to wear through. If you do choose a thin fabric use it only where it will receive minimal wear.

**Latex or acrylic backings are found on the majority of upholstery fabrics on the market.** Coatings are used to: 1) prevent smooth yarns from slipping and unravelling, 2) give the fabric additional body and stiffness, 3) stabilize yarns against shrinkage, and 4) minimize soil and stain penetration into the fabric and stuffing. **Be cautious, however, of an overly thick coating which tends to be stiff and often camouflages an inferior fabric.** The backing can peel and crack from mechanical action in normal use and wear. When the backing is totally or partially lost, the fabric shreds because the loose weave is no longer held in place. This type of problem is very common with less expensive olefin and olefin-blend fabrics.

**Loosely woven fabrics, (illustration 1-a)** fabrics with fancy yarns and fabrics with floating yarns such as **satin, damask and frieze**, are prone to snagging. **Snagging contributes to decreased wear and loss of surface appearance.**

Fabrics which have a **raised surface design (illustration 1-b)**, such as **matelasse** and **brocade**, or yarns that are more pronounced than others will encounter problems with uneven concentrated wear.

With **pile fabrics (illustration 1-c) such as velvet, corduroy and frieze**, note the type of fibre composing the pile. It is the fibre that will receive the most abrasion. **The denser the pile, the longer the wear life. Short, dense pile resists crushing and matting extremely well.** It is also important that the backing, or ground fabric, be closely woven. This helps ensure that the pile does not come out. When choosing a pile upholstery fabric pick gently at the pile; the pile should not be easy to pull out or snag.

**Flocked fabrics (illustration 1-d),** though they resemble pile fabrics in appearance and feel, are made very differently. Small particles of fibres are attached with an adhesive (usually latex) to the surface of a background fabric. **Flocked fabrics are found mainly in less expensive furniture because they are less costly to produce than true pile fabrics. They are, however, not as durable.** The pile can loosen from the adhesive and be scraped off. The adhesive can degrade through time and be adversely affected by drycleaning solvents thus releasing the pile. Bare

# Glaze

**Cotton chintz fabrics are characterized by a glazed surface with a highly lustrous sheen.** The finish can be either a nondurable wax or starch glaze or a durable resin glaze. With many chintz upholstery fabrics the glaze is partially or totally dissolved by moisture and drycleaning solvents. Once the finish is affected it cannot be corrected. This creates a problem even for spotcleaning.

If at all possible, test a small hidden area for permanence of finish. Crumple and crease the fabric in your hand. No whitish streaks or marks should remain. If any do, the finish is either not permanent or too heavily applied.

# Stain-repellent

**These finishes resist either water-borne soils or water and oil-borne soils.** Common trade names are Scotchguard and Zepel. The soil forms beads on the fabric surface and does not penetrate. Many of these finishes, however, decrease the ease of cleaning; it is difficult for cleaning solutions to penetrate the fabric and thus remove the soil.

Stain repellent sprays can be purchased by the consumer and applied to any fabric. The effectiveness of the spray coating depends much on the penetration of the spray; therefore, a commercial application using a forceful spray gun usually has better results than an "at-home" coating. With pile fabrics specifically, the finish that is applied commercially ensures thorough spray penetration. An even coat must be applied; areas of concentrated spray will weaken the fabric because the flexibility of the fibres is reduced. The fabric must be clean before the finish is applied.

# Soil-release

**These finishes are especially for oily stains and are intended to make stains easier to remove.** They also improve the anti-static properties of the fabric. They make the fibre more "wettable" thus permitting easier cleaning.

The properties of both stain-repellence and soil-release are often combined in one finish, as in Scotchguard Plus and Milliguard. These finishes are excellent for upholstery that will receive considerable wear. Polyester has an affinity for oily soils so it is essential that this fibre have a soil release finish.

# Anti-static

**This is a chemical treatment applied by the manufacturer to the fabric or yarns to prevent the build-up of static, primarily on synthetic fibres.** This is a particularly good finish for nylon. Some anti-static finishes effectively inhibit soiling by reducing the fabric's attraction for electrostatically charged air-borne dust. Anti-static finishes can wear off and be removed through cleaning but they can be re-applied by a professional upholstery cleaner.

# Other Finishes

Finishes can be applied to upholstery fabrics for crush resistance as well as resistance to mildew, mold and moths. Wool is often mothproofed — a definite advantage for this fibre.

# D. Colorfastness

**Color loss occurs in upholstery fabrics as a result of abrasion, light and fume fading and perspiration.** Color loss is more noticeable on intensely colored fabrics. Cotton and rayon fabrics are very prone to crocking (color loss through abrasion).

Resistance to perspiration is important on the arms of chairs and sofas. Besides producing color loss or color change, perspiration weakens the fibres, promoting fabric damage. Arms of chairs and sofas, therefore, should have covers.

Color loss from exposure to light can be reduced by keeping draperies and window treatments closed during hours of bright sunlight. Light fading is common in cotton/rayon/acetate fabrics of green and blue coloration.

Check the Fibre Property Chart for the resistance to fading of the various fibres.

certain areas such as cushion corners and sides, or not at all. Polyester fibres, with their excellent resilience are commonly used for fibre-fills.

Down is also used as a stuffing for cushions and pillows. It is resilient and lightweight. As well, unlike foam, down does not degrade over time. This makes it a very long-lasting cushioning material. Because it is expensive it is often blended with feathers. Down is generally found in higher quality and custom-made upholstered furniture. For cleaning, the inner cushion filled with the down must be removed.

Overstuffed furniture, particularly if it is covered with cotton chintz, is easily pierced because the fabric is held so taut. This furniture should be restricted to rooms which are not heavily used.

With slippery fabrics such as olefins, make sure the furniture decking is made of a fabric other than the cover fabric, preferably a non-slippery one. This way the cushions will not easily slide out. With clingy fabrics such as velvets, the decking is also better if made of a fabric other than the cover fabric; slipping or twisting of upholstery on cushions is reduced this way.

**Single-edged piping on cushions is preferable to double-edged because of the reduced exposure to abrasion.**

When selecting furniture check for good materials and good workmanship. Details to look for include: **Piped seams with neat stitching; patterns matched and centered on cushions and backs; seat cushions that rest squarely on the chair with no gaping; zipper closures on cushions to give a neat fit; reversible cushions; hems and pleats that are even and hang straight; arm covers; kiln-dried hardwood frame and solid frame construction; sturdy spring system; resilient cushioning.**

Shop at a reputable store. Make sure the furniture has a guarantee or warranty. If you have furniture re-upholstered or custom-made remember to ask for the fabric remnants; you have paid for them and they are good to have in case of minor repairs or for making extra throw cushions, etc.

# 3.FLAMMABILITY

**The greatest proportion of accidents caused by burning and inhalation of smoke and toxic fumes occurs in the home, and most of these involve bedding or upholstered furniture.** In an actual fire involving furniture, the ease of ignition and subsequent course of the fire are determined not by any one particular material on its own, but by the combination of materials used in the upholstery and by the design of, and the environment around, the furniture.

The fabric cover plays an extremely important role, not only in the initial ignition stage, but also in what happens subsequently in terms of smoke and toxic gas evolution. Resistance to heat and flammability of each fibre is indicated on the Fibre Property Chart. Flame-resistant does not mean flame-proof. No fibre commonly used in upholstered furniture is flame-proof. Fibres do differ, though, in their tendency to support combustion after a flame is withdrawn.

Although fibres may not be highly flammable per se, some melt readily, particularly synthetics. Polypropylene fibres melt at a very low temperature so may be a poor choice for people who smoke.

Polyurethane is the most common synthetic foam used in upholstered furniture. **Polyurethane ignites readily, burns rapidly and like any other burning material, gives off toxic fumes.** Foams and fabric interliners have been developed that have increased flame resistance but they are expensive and are found mainly in commercial applications.

Furniture design influences flammability as well. Vertical surfaces burn three times as fast as horizontal surfaces. "Cigarette traps" such as narrow crevices should be avoided where possible. Hollow spaces between the fabric cover and the foam construction are similarly undesirable since they help flames to spread.

Finishes can be applied to both fabrics and foams that

**Professional upholstery cleaners should be called in to attend to difficult and major staining problems.** Consumers generally do not have available to them the solvents necessary to fully remove difficult stains. As well, it is difficult for consumers to totally remove detergent and solvent residues from fabrics and unsightly marks from detergent browning often occur as a result.

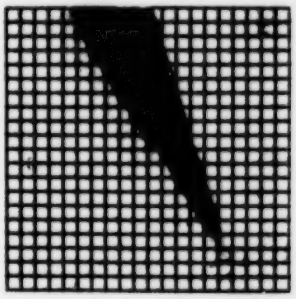
Professional upholstery cleaners are trained to establish which of the various cleaning methods are most suitable for your furniture. Very often a variety of methods need to be employed. Steam cleaning involves a detergent solution and extremely hot water. Drycleaning is similar to steam cleaning but uses a solvent solution. Wet cleaning involves water, shampoo and more mechanical action than steam or drycleaning. Electro-static cleaning is newer on the market and it uses far less moisture than the previous traditional methods. Fabrics that are prone to shrinkage may respond well to this method. Fibre content of upholstery fabric must be considered when choosing a cleaning method.

Since cleaning often eliminates or reduces the effectiveness of finishes, have them re-applied by a professional cleaner, or alternately consider a home application. Professional application of finishes is more costly but a more thorough job is possible.

# 6. EXPECTED WEAR LIFE

Wear-life of upholstered furniture depends upon an infinite number of factors. Consumers' expectations also greatly vary. As such, generalizations regarding expected wear-life are not easily made.

Consider the amount and type of use the furniture will receive. Consider how long you want the furniture to be serviceable. Good quality furniture is costly but is a worth while investment. If appropriately selected and well cared for upholstered furniture can last a long time. **If the frame and spring system are of good quality the wear-life of the furniture can be extended even further through re-upholstering.**



# 7. WORKSHEET

Knowing your needs before you shop can help greatly in narrowing down available choices. The worksheet, on page 10, is designed to assist you as you shop for furniture. First of all, complete the segment concerning your needs. Then, take the worksheet along shopping and for each alternative you consider, evaluate how it corresponds to your needs. The alternative that most closely corresponds to your needs is likely to be an approprite choice.

You will notice when shopping for new upholstered furniture that the trendy pieces will often be attractively displayed. This may influence your choice and possibly not to your advantage. The worksheet will help you stay on track.

Always visit a number of stores when buying new upholstered furniture. Be sure to select a reputable store when purchasing. If you are in the market for reupholstery, recommendations from friends that were satisfied with the quality of a reupholstery job and the overall service provided is valuable.

## Appendix E: Data Collection Instruments

E 1 Pre-test

E 2 Interview Guide

E 3 Lifestyles

E 4 Demographic/Socioeconomic

## Appendix E 1

Pre-test

The following questions are designed to tell us something about your experience in purchasing upholstered furniture as well as your current knowledge about such products. For questions 4 to 13, we would appreciate your checking the "don't know" response if you do not know the answer or do not understand the question. Please do not guess.

1. How many times have you purchased upholstered furniture (sofa and/or chair) in the last five years? _____

   (Note: purchasing a matching set of 2 or more pieces at the same time would count as only one purchase.)

2. How many times have you purchased upholstered furniture in the last ten years (including the purchases in #1 above)? _____

3. How many times have you purchased upholstered furniture in the last twenty years (including the purchases in #2 above)? _____

For the following six items, please indicate whether you think each statement is true or false.

4. With pile fabrics such as velvet, the denser the pile, the longer the wear life.

   True _____ False _____ Don't Know _____

5. Stiff coatings on the back of an upholstery fabric help the fabric have a longer life.

   True _____ False _____ Don't Know _____

6. Non-expanded vinyls remain flexible for a longer length of time than do expanded vinyls.

   True _____ False _____ Don't Know _____

7. Cellulose fibers, like cotton and rayon, are more likely to burn than wool and nylon.

   True _____ False _____ Don't Know _____

8. All upholstered furniture now sold in Canada must bear labels indicating compliance with flammability standards.

   True _____ False _____ Don't Know _____

9. The fire hazard of upholstered furniture is determined as much by smoldering of cushioning materials and the resulting smoke and fumes as by the rapid burning of covering fabric.

   True _____ False _____ Don't Know _____



Continued ...

For questions 10 to 13, check the ONE answer you think is correct.
If you do not know, please do not guess.

10. Better overall durability of an upholstery fabric results with:

_____ a) tighter weaves and loosely twisted yarns
_____ b) looser weaves and synthetic yarns
_____ c) tighter weaves and highly twisted yarns

Don't Know _____

11. Which of the following statements regarding flocked upholstery fabrics is <u>false</u>?

_____ a) Flocked fabrics, though they resemble pile fabrics in appearance and feel, are made very differently.
_____ b) Flocked fabrics are generally more durable than pile fabrics.
_____ c) Small particles of fibers are attached with an adhesive to the surface of a background fabric and can sometimes loosen or rub off.

Don't Know _____

12. It has been estimated that ignition of upholstered furniture accounts for

_____ a) 0 - 5%
_____ b) 11 - 15%
_____ c) 30 - 40%

of all fire deaths in Canada.

Don't Know _____

13. In an actual fire involving furniture, the ease of ignition and subsequent course of the fire are determined by:

_____ a) the combination of materials used in the upholstery
_____ b) the surroundings of the upholstered furniture
_____ c) the design of the upholstered furniture
_____ d) all of the above
_____ e) a) and c) only.

Don't Know _____

## Appendix E 2

Interview Guide

___ ___ ___

Interviewer: Please record who is participating:

1. couple _____
2. wife alone _____
3. husband alone _____
4. single male _____
5. single female _____
6. other (specify) _____

---

INTRODUCTION: Thank you once again for agreeing to participate in this project. I would like to remind you that all information you give me will be confidential, and that you can withdraw from the study at any time. In a minute I will be asking you to choose among a variety of upholstery fabrics, imagining that you are about to reupholster some sofa and/or chair already in your home. You should select the fabric you would actually choose if this were a real purchase situation, because your name will be entered into a draw and thus you may have the chance to win the fabric you select.

Would you please tell me which sofa/chair you might be wanting to reupholster?

Interviewer: note style 1. contemporary formal ___ 2. informal ___
3. traditional formal ___ 4. informal ___

: condition 1. like new ___ 2. somewhat worn ___
3. quite worn ___

---

Before we begin, I have one question for (the two of) you (to think about and discuss). If you were actually buying fabric to reupholster this sofa/chair today, what characteristics would you be looking for in your choice of fabric; i.e., what properties would you want the fabric to have or not have?

Interviewer: record all attributes as mentioned. (Do not prompt.)

(Respondent 1) (Respondent 2)

Now please imagine that I am the interior design consultant from your selected retailer. I have brought sample books to your home so that you can select your fabric here among your other furnishings. Let me first show you each of them, then you can go through them again as many times as you wish. Assume that all fabrics are in the same price range and are available in approximately the same colors (i.e., do not worry about price and color for now).

(Go through samples: "This is a cotton corduroy," etc.)
Take time now to look carefully through the book and select the ONE fabric you would order. Take as much time as you wish.

Interviewer: record relevant comments/questions during choice process.

(Respondent 1) (Respondent 2)

Note: Did respondent(s) - comment or ask about special labels _____
look at special labels _____
seem to be unaware of special labels _____
N/A _____

SELECTED FABRIC (Interviewer: check one)

1. _____ A (Fr, low durability)
2. _____ B (non FR, low durability)
3. _____ C (FR, med. durability)
4. _____ D (non FR, med. durability)
5. _____ E (FR, high durability)
6. _____ F (non FR, high durability)
7. _____ G (FR, low durability)
8. _____ H (non FR, low durability)
9. _____ I (FR, med. durability)
10. _____ J (non FR, med. durability)
11. _____ K (FR, high durability)
12. _____ L (non FR, high durability)

Can you tell me what were the main reasons you chose this fabric?

1. _____
2. _____ (Do not prompt.)
3. _____

Now, for each fabric, I would like you to estimate the likelihood that you would buy it if you were actually going to reupholster this sofa/chair. Can you rate each one on a scale of one to ten, where ten is extremely likely to buy and one is extremely unlikely to buy?

| Sample | Rating (1-10) | | | |
|---|---|---|---|---|
| | A | _____ | G | _____ |
| | B | _____ | H | _____ |
| | C | _____ | I | _____ |
| | D | _____ | J | _____ |
| | E | _____ | K | _____ |
| | F | _____ | L | _____ |

---

Please tell me now where this sofa/chair would be used if it were reupholstered with the fabric you have selected:

1. Living Room _____ 2. Family Room _____ 3. Basement Recreation _____
4. Den _____ 5. Other _____ (Specify _____ )

Does this mean that:

1. _____ it will get only occasional use;
2. _____ it will get more than occasional, but not constant usage; mostly by adults;
3. _____ it will be used by a family where it will get normal, constant usage?

---

For respondents in CE treatments 3 & 4 only:

You should have received a brochure on upholstered furniture approximately one or two weeks ago. Would you mind telling me whether or not you have read it?

| Respondent 1: | | Respondent 2: | |
|---|---|---|---|
| | Yes _____ | | Yes _____ |
| | Partly _____ | | Partly _____ |
| | No _____ | | No _____ |
| | Unaware _____ | | Unaware _____ |
| | N/A _____ | | N/A _____ |

I would now ask you to fill in each of these forms. May I remind you once again that all information you give me will be confidential and in no way associated with your name.

Hand out: (Separately)
(a) Post-Test - "These questions may look familiar. I would like you to answer them once again."

(Read instructions at top of page.)

(b) Lifestyles (Read instructions at top of page and point out "strongly agree" and "strongly disagree" columns.)

(c) Demographics (Read instructions at top of page. If two respondents, direct them to respond for both.)

---

Interviewer:

1. (a) How many people live in your home? _____
   (b) How many adults (18 years & over)? _____
   (c) How many senior citizens? _____
   (d) How many children 12 years and under? _____
   (e) How many children 13-17 years? _____
2. How many people in the home smoke? _____
3. Interviewer note sex of respondents:

   Respondent 1 _____ Respondent 2 _____

That is the end of my questions. I wish to thank you once again for your cooperation.

The purpose of this study was to determine the effect of various education and information strategies on consumers' choice of upholstery fabrics. For example, one of the factors that was varied is the labels on these samples. (*I would like to point out to you now that the special labels on these samples are not currently used in Canada, so do not expect to see them on fabric or furniture on the Canadian market right now. However ...) the Federal Government is considering implementing some type of flammability regulation or labelling program for upholstered furniture. This study was designed to help the Government determine the usefulness of labels.

*Interviewer:

Omit this portion when no special (FR) labels are attached to samples.

## Appendix E 3

**Lifestyles**

3

Please read through each of the different statements listed below and circle the one number which best describes the extent to which you 'agree' or 'disagree' with each statement.

| | Strongly Agree | Somewhat Agree | Neither Agree nor Disagree | Somewhat Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| I think I have more self-confidence than most people. | 1 | 2 | 3 | 4 | 5 |
| My friends or neighbours often come to me for advice. | 1 | 2 | 3 | 4 | 5 |
| I must admit I really don't like household chores. | 1 | 2 | 3 | 4 | 5 |
| I shop a lot for "specials". | 1 | 2 | 3 | 4 | 5 |
| I often seek out the advice of my friends regarding which brand to buy. | 1 | 2 | 3 | 4 | 5 |
| I don't like to see children's toys lying about. | 1 | 2 | 3 | 4 | 5 |
| I like to entertain in my own house. | 1 | 2 | 3 | 4 | 5 |
| I find myself checking the prices in the grocery store even for small items. | 1 | 2 | 3 | 4 | 5 |
| I usually keep my house very neat and clean. | 1 | 2 | 3 | 4 | 5 |
| I am more independent than most people. | 1 | 2 | 3 | 4 | 5 |
| I'd rather be more comfortable and less stylish than the other way around. | 1 | 2 | 3 | 4 | 5 |
| I find cleaning my house an unpleasant task. | 1 | 2 | 3 | 4 | 5 |
| People come to me more often than I go to them for information about brands. | 1 | 2 | 3 | 4 | 5 |
| I like to have the latest styles and colours in my home. | 1 | 2 | 3 | 4 | 5 |
| I sometimes worry that something I buy will turn out to be a mistake. | 1 | 2 | 3 | 4 | 5 |
| I usually watch the advertisements for announcements of sales. | 1 | 2 | 3 | 4 | 5 |
| My neighbours or friends usually give me good advice on what brands to buy in the grocery store. | 1 | 2 | 3 | 4 | 5 |
| I am uncomfortable when my house is not completely clean. | 1 | 2 | 3 | 4 | 5 |
| I think I have a lot of personal ability. | 1 | 2 | 3 | 4 | 5 |
| I would like to redecorate my home often. | 1 | 2 | 3 | 4 | 5 |
| Accessories are an important part of today's look. | 1 | 2 | 3 | 4 | 5 |
| A person can save a lot of money by shopping around for bargains. | 1 | 2 | 3 | 4 | 5 |
| I prefer a simple, classic look to a more fancy or detailed style. | 1 | 2 | 3 | 4 | 5 |
| Our days seem to follow a definite routine such as eating meals at a regular time, etc. | 1 | 2 | 3 | 4 | 5 |

5

| | Strongly Agree | Somewhat Agree | Neither Agree nor Disagree | Somewhat Disagree | Strongly Disagree | |
|---|---|---|---|---|---|---|
| I think I have more self-confidence than most people. | 1 | 2 | 3 | 4 | 5 | 5 |
| My friends or neighbours often come to me for advice. | 1 | 2 | 3 | 4 | 5 | |
| I must admit I really don't like household chores. | 1 | 2 | 3 | 4 | 5 | |
| I shop a lot for "specials". | 1 | 2 | 3 | 4 | 5 | |
| I often seek out the advice of my friends regarding which brand to buy. | 1 | 2 | 3 | 4 | 5 | |
| I don't like to see children's toys lying about. | 1 | 2 | 3 | 4 | 5 | |
| I like to entertain in my own house. | 1 | 2 | 3 | 4 | 5 | |
| I find myself checking the prices in the grocery store even for small items. | 1 | 2 | 3 | 4 | 5 | |
| I usually keep my house very neat and clean. | 1 | 2 | 3 | 4 | 5 | |
| I am more independent than most people. | 1 | 2 | 3 | 4 | 5 | |
| I'd rather be more comfortable and less stylish than the other way around. | 1 | 2 | 3 | 4 | 5 | |
| I find cleaning my house an unpleasant task. | 1 | 2 | 3 | 4 | 5 | |
| People come to me more often than I go to them for information about brands. | 1 | 2 | 3 | 4 | 5 | |
| I like to have the latest styles and colours in my home. | 1 | 2 | 3 | 4 | 5 | |
| I sometimes worry that something I buy will turn out to be a mistake. | 1 | 2 | 3 | 4 | 5 | |
| I usually watch the advertisements for announcements of sales. | 1 | 2 | 3 | 4 | 5 | |
| My neighbours or friends usually give me good advice on what brands to buy in the grocery store. | 1 | 2 | 3 | 4 | 5 | |
| I am uncomfortable when my house is not completely clean. | 1 | 2 | 3 | 4 | 5 | |
| I think I have a lot of personal ability. | 1 | 2 | 3 | 4 | 5 | |
| I would like to redecorate my home often. | 1 | 2 | 3 | 4 | 5 | |
| Accessories are an important part of today's look. | 1 | 2 | 3 | 4 | 5 | |
| A person can save a lot of money by shopping around for bargains. | 1 | 2 | 3 | 4 | 5 | |
| I prefer a simple, classic look to a more fancy or detailed style. | 1 | 2 | 3 | 4 | 5 | |
| Our days seem to follow a definite routine such as eating meals at a regular time, etc. | 1 | 2 | 3 | 4 | 5 | |
| When I'm shopping I look for practical rather than fashionable items. | 1 | 2 | 3 | 4 | 5 | |
| I enjoy most forms of housework. | 1 | 2 | 3 | 4 | 5 | |
| I always look at the label to find out what an item is made of before I buy it. | 1 | 2 | 3 | 4 | 5 | |
| My idea of housekeeping is "once over lightly". | 1 | 2 | 3 | 4 | 5 | |
| I like to be considered a leader. | 1 | 2 | 3 | 4 | 5 | 33 |

The following items are to provide us with background information about all participants in the study. Please take this sheet and check or fill in the appropriate responses.

---

| | RESPONDENT 1 | RESPONDENT 2 (If applicable) |
|---|---|---|

1. Highest level of education you have completed:

| | | |
|---|---|---|
| Elementary | | |
| Incomplete ..... | ____ | ____ |
| Complete ..... | ____ | ____ |
| Junior High | | |
| Incomplete ..... | ____ | ____ |
| Complete ..... | ____ | ____ |
| High School | | |
| Incomplete ..... | ____ | ____ |
| Complete ..... | ____ | ____ |
| Non-University (Voc/Tech, Nursing Schools) | | |
| Incomplete ..... | ____ | ____ |
| Complete ..... | ____ | ____ |
| University | | |
| Incomplete ..... | ____ | ____ |
| Diploma/Certificate (Hygienists) ..... | ____ | ____ |
| Bachelor's Degree ..... | ____ | ____ |
| Medical Degree (Vets, Drs, Dentists) ..... | ____ | ____ |
| Master's Degree ..... | ____ | ____ |
| Doctorate ..... | ____ | ____ |

2. In total, how many years of schooling do you have? This includes total of grade school, high school, vocational, technical, and university. ____ years ____ years

3. Your Age (in years) ____ years ____ years

4. Your present employment status (check one):

| | | |
|---|---|---|
| Employed full-time ..... | ____ | ____ |
| Employed part-time ..... | ____ | ____ |
| Unemployed ..... | ____ | ____ |
| Retired ..... | ____ | ____ |
| In School ..... | ____ | ____ |
| Keeping house ..... | ____ | ____ |
| Other (Specify) _____ | ____ | ____ |

5. Your current OCCUPATION: please describe what you do and the kind of firm or agency for which you do it (e.g., clerk in a grocery store; elementary school teacher; professional engineer in own consulting firm).

Respondent 1 _____

Respondent 2 _____

6. What is the TOTAL income of all the members of this household for this past year before tax and deductions? Please check the most appropriate category.

| | | | |
|---|---|---|---|
| Under $10,000 | ____ | $34,000 - 39,999 | ____ |
| $10,000 - 15,999 | | | |

1. Highest level of education you have completed:

| | | |
|---|---|---|
| **Elementary** | | |
| Incomplete ..... | ____ | ____ |
| Complete ..... | ____ | ____ |
| **Junior High** | | |
| Incomplete ..... | ____ | ____ |
| Complete ..... | ____ | ____ |
| **High School** | | |
| Incomplete ..... | ____ | ____ |
| Complete ..... | ____ | ____ |
| **Non-University (Voc/Tech, Nursing Schools)** | | |
| Incomplete ..... | ____ | ____ |
| Complete ..... | ____ | ____ |
| **University** | | |
| Incomplete ..... | ____ | ____ |
| Diploma/Certificate (Hygienists) ..... | ____ | ____ |
| Bachelor's Degree ..... | ____ | ____ |
| Medical Degree (Vets, Drs, Dentists) ..... | ____ | ____ |
| Master's Degree ..... | ____ | ____ |
| Doctorate ..... | ____ | ____ |

2. In total, how many years of schooling do you have? This includes total of grade school, high school, vocational, technical, and university. ____ years ____ years

3. Your Age (in years) ____ years ____ years

4. Your present employment status (check one):

| | | |
|---|---|---|
| Employed full-time ..... | ____ | ____ |
| Employed part-time ..... | ____ | ____ |
| Unemployed ..... | ____ | ____ |
| Retired ..... | ____ | ____ |
| In School ..... | ____ | ____ |
| Keeping house ..... | ____ | ____ |
| Other (Specify) _____ | ____ | ____ |

5. Your current OCCUPATION: please describe what you do and the kind of firm or agency for which you do it (e.g., clerk in a grocery store; elementary school teacher; professional engineer in own consulting firm).

Respondent 1 _____

Respondent 2 _____

6. What is the TOTAL income of all the members of this household for this past year before tax and deductions? Please check the most appropriate category.

| | | | |
|---|---|---|---|
| Under $10,000 | ____ | $34,000 - 39,999 | ____ |
| $10,000 - 15,999 | ____ | $40,000 - 49,999 | ____ |
| $16,000 - 21,999 | ____ | $50,000 - 59,999 | ____ |
| $22,000 - 27,999 | ____ | $60,000 - 69,999 | ____ |
| $28,000 - 33,999 | ____ | $70,000+ | ____ |

## Appendix E 4

Demographic/Socioeconomic

## Appendix F

Instructions to Interviewers

## General Directions to Interviewers

| | Attached Forms for Reference |
|---|---|
| 1. Each time you receive a list of consumers' names you will be given ID, address, phone number, CE treatment; as well as a code sheet with ID and the next 9 items completed. | A<br>B |
| 2. You should phone the consumer as soon as possible and arrange an in-home appointment within the specified time period. Try to ascertain at this point who will comprise the decision making unit to be interviewed. If the appointment is made much in advance, confirming it again closer to the appointment time might be helpful. | C |
| 3. For each in-home appointment, arrange a file containing one each of: | |
| - interview guide | D |
| - post-test | E |
| - lifestyles instrument | F |
| - demographic instrument | G |
| - signature sheet | H |
| Make sure that the ID number is filled in on each of the first four instruments prior to the appointment. (In addition, you could take along one extra copy of the post-test and lifestyles instrument in case Respondent 2 wishes to complete these. This data will not be used, however, so do not attach ID or code it.) | |
| 4. Before you leave, be sure one respondent in the household signs the signature sheet. These are necessary to prove to the funding agency that the interviews actually took place. | H |
| 5. During the choice exercise, it is essential to ensure that the respondents see all pages of the sample book in full. As you show them through the sample book, be sure to lay the book out flat and turn each page over fully so that the next page is completely visible. | D<br>(top of p. 2) |
| At this point in the interview it is also essential to record all relevant comments. This will not be easy, but it is very important to do so. | |
| While respondents are looking at the fabrics do not volunteer any information about properties. However if they ask about a specific property, answer as simply as you can - e.g., if you have CI treatment #2 (UFAC labels) a consumer might ask if an unlabelled fabric is flame resistant. Point out that it has no label indicating that it is. You might also indicate, for example, that it is cotton and likely flammable. | |

6. As soon as possible after you have completed the interview, code the data on the code sheets, according to the enclosed code book. I J

7. Staple together the two code sheets and the lifestyles instrument. I,F

8. For each participating household, return:

| | |
|---|---|
| all data sheets | D-G |
| code sheets | I,F |
| signature sheet | H |

## Appendix G

Codebook

# CCA CANADA: UPHOLSTERY CHOICE PROJECT

## Data Code Sheet

Card No. 1

Identification ___ ___

City ___

Organization ___ ___

CE Treatment ___

CI Treatment ___

Pre-Test: Experience ___ 10

FR Knowledge ___

General Knowledge ___

Pre-coded

Post-Test: Actual score — FR Knowledge (0-5) ___; General Knowledge (0-5) ___ (missing=9)

Participant Type 1-6 ___

Furniture: Style 1-4 ___

Condition 1-3 ___

from interview guide missing=0

Salient Dimensions I: (Respondent 1) Color ___ 20

Aesthetics ___

Tactile ___

Durability ___

Ease of Care ___

FR ___

Fibre ___

Fabric ___

Other ___

Yes=1 no=2

Salient Dimensions I: (Respondent 2) Color ___ 30

Aesthetics ___

Tactile ___

Durability ___

Ease of Care ___

FR ___

Fibre ___

Fabric ___

Other ___

yes=1 no=2 n/a=3

Salient Dimensions II: (Respondent 1) Color ___ 36

Aesthetics ___

Tactile ___

Durability ___

Ease of Care ___ 40

FR ___

Fibre ___

Fabric ___

Other ___

yes=1 no=2

Salient Dimensions II: (Respondent 2) Color ___

Aesthetics ___

Tactile ___

Durability ___

Ease of Care ___

FR ___ 50

Fibre ___

Fabric ___

Other ___

yes=1 no=2 n/a=3

Label Awareness 1. comment 2. look 3. unaware 4. n/a ___

Selected Fabric 1-12 ___ ___

FR (yes/no) ___

Durability 1. low 2. med. 3. high ___

Casual/Informal ___

see interview guide

Reason 1 ___ 60

Reason 2 ___

Reason 3 ___ 62

1. color
2. aesthetics
3. tactile
4. durability
5. ease of care
6. FR
7. fiber
8. fabric
9. other
0. missing/no response

Organization — Pre-coded

CE Treatment

CI Treatment

Pre-Test: Experience

FR Knowledge

General Knowledge

10

Post-Test: FR Knowledge (0-5) missing=9

Actual score: General Knowledge (0-5)

Participant Type 1-6

Furniture: Style 1-4

Condition 1-3

from interview guide missing=0

Salient Dimensions I: Color

(Respondent 1) Aesthetics

Tactile

Durability

Ease of Care

FR

Fibre

Fabric

Other

20

Yes=1 no=2

Salient Dimensions I: Color

(Respondent 2) Aesthetics

Tactile

Durability

Ease of Care

FR

Fibre

Fabric

Other

30

yes=1 no=2 n/a=3

35

Durability

Ease of Care

FR

Fibre

Fabric

Other

yes=1 no=2

40

Salient Dimensions II: Color

(Respondent 2) Aesthetics

Tactile

Durability

Ease of Care

FR

Fibre

Fabric

Other

yes=1 no=2 n/a=3

50

Label Awareness
1. comment
2. look
3. unaware
4. n/a

Selected Fabric 1-12

FR (yes/no) ① ②

Durability
1. low
2. med.
3. high

see interview guide

Casual/Informal ① ②

Reason 1

Reason 2

Reason 3

1. color
2. aesthetics
3. tactile
4. durability
5. ease of care
6. FR
7. fiber
8. fabric
9. other
0. missing/no response

60

62

Card No. 2

Identification ___ ___ ___

Likelihood to Buy:

| | | |
|---|---|---|
| A | ___ ___ | |
| B | ___ ___ | |
| C | ___ ___ | 10 |
| D | ___ ___ | |
| E | ___ ___ | |
| F | ___ ___ | |
| G | ___ ___ | |
| H | ___ ___ | 20 |
| I | ___ ___ | |
| J | ___ ___ | |
| K | ___ ___ | |
| L | ___ ___ | |

Actual rating 1-10 missing=0

Room 1-5 missing=0 ___ see interview guide

Intended Use 1-3 ___ 30

Suitability for Use ___
0. missing
1. less than adequate
2. adequate
3. more than needed

Read Brochure (Respondent 1) ___
0. missing
1. yes
2. partly
3. no
4. unaware
5. n/a
(Respondent 2) ___ 33

Employment Status:
1. employed full-time
2. employed part-time

Respondent 1: Education 1-14 (see below) ___ ___ 34

Total Schooling ___ ___ actual figure
Age ___ ___

Employment Status 1-7 (see below) ___ 40

missing=0 Occupation do not code ___ ___

Respondent 2: Education 1-14 (see below) ___ ___

Total Schooling ___ ___ actual figure
Age n/a=99 ___ ___

Employment Status 1-7 (see below) n/a=9 ___

missing=0 Occupation do not code ___ ___ 50

Total Income 1-10 (see interview guide) missing=00 ___ ___

Number of People ___
Number of Adults ___
Senior Citizens ___
Children up to 12 ___
Children 13-17 ___
Number who smoke ___
actual no
8=8 or more
9=missing

Sex Respondent 1 ___
Sex Respondent 2 ___ 61
1. female
2. male
3. n/a

Education:
Elementary
1. Incomplete .....
2. Complete .....
Junior High

Actual rating 1-10 missing=0

C ___ ___ 10

D ___ ___

E ___ ___

F ___ ___

G ___ ___

H ___ ___ 20

I ___ ___

J ___ ___

K ___ ___

L ___ ___

Room 1-5 missing=0 ___

Intended Use 1-3 (see interview guide) ___ 30

Suitability for Use ___
0. missing
1. less than adequate
2. adequate
3. more than needed

Read Brochure (Respondent 1) ___
0. missing
1. yes
2. partly
3. no
4. unaware
5. n/a
(Respondent 2) ___ 33

Employment Status:
1. employed full-time
2. employed part-time
3. unemployed
4. retired
5. in school
6. keeping house
7. other
9. n/a (resp. 2)

missing=0 Occupation do not code ___ ___

Respondent 2: Education 1-14 (see below) ___ ___

Total Schooling ___ ___
Age (actual figure n/a=99) ___ ___

Employment Status 1-7 (see below) n/a=9 ___

missing=0 Occupation do not code ___ ___ 50

Total Income 1-10 (see interview guide) missing=00 ___ ___

Number of People ___

Number of Adults ___

Senior Citizens (actual no 8=8 or more 9=missing) ___

Children up to 12 ___

Children 13-17 ___

Number who smoke ___

Sex Respondent 1 (1. female 2. male 3. n/a) ___

Sex Respondent 2 ___ 61

Education:

Elementary
1. Incomplete .....
2. Complete .....

Junior High
3. Incomplete .....
4. Complete .....

High School
5. Incomplete .....
6. Complete .....

Non-University (Voc/Tech, Nursing Schools)
7. Incomplete .....
8. Complete .....

University
9. Incomplete .....
10. Diploma/Certificate (Hygienists) .....
11. Bachelor's Degree .....
12. Medical Degree (Vets, Drs, Dentists) .....
13. Master's Degree .....
14. Doctorate .....

## Appendix H

Excerpts from 1982 Edmonton
Area Study Frequencies

FILE DAS 1982 (CREATION DATE = 05/25/83)

VAR300 TOTAL YEARS SCHOOLING OF SPOUSE

| CATEGORY LABEL | CODE | ABSOLUTE FREQ | RELATIVE FREQ (PCT) | ADJUSTED FREQ (PCT) | CUM FREQ (PCT) |
|---|---|---|---|---|---|
| ONE YEAR OR LESS | 1. | 1 | 0.2 | 0.3 | 0.3 |
| | 2. | 1 | 0.2 | 0.3 | 0.7 |
| | 3. | 1 | 0.2 | 0.3 | 1.0 |
| | 4. | 4 | 0.8 | 1.3 | 2.3 |
| | 5. | 1 | 0.2 | 0.3 | 2.7 |
| | 6 | 6 | 1.2 | 2.0 | 4.7 |
| | 7 | 6 | 1.2 | 2.0 | 6.6 |
| | 8. | 8 | 1.6 | 2.6 | 11.0 |
| | 9. | 18 | 3.7 | 6.3 | 17.3 |
| | 10. | 21 | 4.1 | 7.0 | 24.3 |
| | 11. | 18 | 3.7 | 6.3 | 30.7 |
| | 12. | 82 | 16.2 | 27.3 | 58.0 |
| | 13. | 17 | 3.4 | 5.7 | 63.7 |
| | 14. | 34 | 6.7 | 8.0 | 71.7 |
| | 15. | 24 | 4.7 | 8.0 | 79.7 |
| | 16. | 26 | 5.1 | 8.7 | 88.3 |
| | 17. | 14 | 2.8 | 4.7 | 93.0 |
| | 18. | 9 | 1.8 | 3.0 | 96.0 |
| | 19. | 7 | 1.4 | 2.3 | 98.3 |
| | 20. | 4 | 0.8 | 1.3 | 99.7 |
| | 24. | 1 | 0.2 | 0.3 | 100.0 |
| NR | 0. | 3 | 0.6 | MISSING | 100.0 |



FILE DAS 1982 (CREATION DATE = 05/25/83)

| | | | | | |
|---|---|---|---|---|---|
| DK | 98 | 1 | 0.2 | MISSING | 100.0 |
| NA | 99 | 203 | 40.0 | MISSING | 100.0 |
| | TOTAL | 507 | 100.0 | 100.0 | |

MEAN 13.467 STD DEV 3.450

VALID CASES 300 MISSING CASES 207

SPSS DATA EVSYEN 05/25/83 PAGE 001

FILE DAS.1982 (CREATION DATE = 05/25/83)

VAR000 OMBSR HOUSEHOLD INCOME THIS PAST YEAR

| CATEGORY LABEL | CODE | ABSOLUTE FREQ | RELATIVE FREQ (PCT) | ADJUSTED FREQ (PCT) | CUM FREQ (PCT) | |
|---|---|---|---|---|---|---|
| UNDER $5000 | 1. | 29 | 5.7 | 6.4 | 6.4 | |
| $5000-7499 | 2. | 6 | 1.2 | 1.3 | 7.8 | 10.6 |
| $7500-9999 | 3. | 13 | 2.6 | 2.8 | 10.6 | |
| $10000-11999 | 4. | 10 | 2.0 | 2.2 | 12.8 | |
| $12000-13999 | 5. | 12 | 2.4 | 2.7 | 15.6 | 8.2 |
| $14000-15999 | 6. | 15 | 3.0 | 3.3 | 18.8 | |
| $16000-17999 | 7. | 28 | 5.5 | 6.0 | 24.8 | |
| $18000-19999 | 8. | 19 | 3.7 | 4.2 | 28.8 | 13.8 |
| $20000-21999 | 9. | 17 | 3.4 | 3.8 | 32.8 | |
| $22000-23999 | 10. | 18 | 3.6 | 4.0 | 36.8 | |
| $24000-25999 | 11. | 32 | 6.3 | 7.1 | 43.7 | 16.9 |
| $26000-27999 | 12. | 26 | 5.1 | 5.8 | 49.4 | |
| $28000-29999 | 13. | 15 | 3.0 | 3.3 | 52.8 | |
| $30000-31999 | 14. | 28 | 5.5 | 6.2 | 59.0 | 13.3 |
| $32000-33999 | 15. | 17 | 3.4 | 3.8 | 62.7 | |
| $34000-35999 | 16. | 18 | 3.6 | 4.0 | 66.7 | |
| $36000-37999 | 17. | 12 | 2.4 | 2.7 | 69.4 | 9.8 |
| $38000-39999 | 18. | 14 | 2.8 | 3.1 | 72.6 | |
| $40000-44999 | 19. | 33 | 6.5 | 7.3 | 79.8 | 13.1 |
| $45000-49999 | 20. | 28 | 5.5 | 6.2 | 86.0 | |
| $50000-54999 | 21. | 17 | 3.4 | 3.8 | 89.8 | 6.2 |
| $55000-59999 | 22. | 11 | 2.2 | 2.4 | 91.8 | |

SPSS DATA= EVSYEN 05/25/83 PAGE 002

FILE DAS 1982 (CREATION DATE = 05/25/83)

| | | | | | | |
|---|---|---|---|---|---|---|
| $60000-64999 | 23. | 11 | 2.2 | 2.4 | 94.2 | 4.0 |
| $65000-69999 | 24. | 7 | 1.4 | 1.5 | 95.8 | |
| $70000-74999 | 25. | 7 | 1.4 | 1.5 | 97.3 | 4.3 |
| $75000+ | 26. | 12 | 2.4 | 2.7 | 100.0 | |
| NR | 0. | 23 | 4.5 | MISSING | 100.0 | |
| DK | 88. | 34 | 6.7 | MISSING | 100.0 | |
| | TOTAL | 507 | 100.0 | 100.0 | | |

MEAN 13.051 STD DEV 6.766

VALID CASES 451 MISSING CASES 56

SPSS BATCH SYSTEM

FILE GSS.1982 (CREATION DATE = 05/25/83)

VAR270 TOTAL YEARS SCHOOLING RESPONDENT

| CATEGORY LABEL | CODE | ABSOLUTE FREQ | RELATIVE FREQ (PCT) | ADJUSTED FREQ (PCT) | CUM FREQ (PCT) |
|---|---|---|---|---|---|
| ONE YEAR OR LESS | 1. | 2 | 0.4 | 0.4 | 0.4 |
| | 2. | 2 | 0.4 | 0.4 | 0.8 |
| | 4. | 1 | 0.2 | 0.2 | 1.0 |
| | 5. | 8 | 1.6 | 1.6 | 2.6 |
| | 6. | 6 | 1.2 | 1.2 | 3.8 |
| | 7. | 8 | 1.6 | 1.6 | 5.4 |
| | 8. | 20 | 3.9 | 4.0 | 8.7 |
| | 9. | 21 | 4.1 | 4.2 | 12.8 |
| | 10. | 34 | 6.7 | 6.7 | 19.6 |
| | 11 | 34 | 6.7 | 6.7 | 26.3 |
| | 12. | 100 | 19.7 | 19.8 | 46.0 |
| | 13. | 53 | 10.3 | 10.5 | 56.5 |
| | 14. | 57 | 11.2 | 11.3 | 67.8 |
| | 15. | 26 | 5.1 | 5.1 | 73.7 |
| | 16. | 63 | 12.2 | 12.5 | 86.0 |
| | 17. | 34 | 6.7 | 6.7 | 91.7 |
| | 18. | 18 | 3.5 | 3.6 | 95.3 |
| | 19. | 5 | 1.0 | 1.0 | 96.3 |
| | 20. | 15 | 3.0 | 3.0 | 99.2 |
| | 22. | 2 | 0.4 | 0.4 | 99.6 |
| | 24. | 1 | 0.2 | 0.2 | 99.8 |
| | 25. | 1 | 0.2 | 0.2 | 100.0 |



SPSS BATCH SYSTEM

FILE GSS.1982 (CREATION DATE = 05/25/83)

| | | | | | |
|---|---|---|---|---|---|
| NA | 0. | 1 | 0.2 | MISSING | 100.0 |
| | TOTAL | 507 | 100.0 | 100.0 | |

MEAN 13.117 STD DEV 3.437

VALID CASES 506 MISSING CASES 1

FILE BAS.1982 (CREATION DATE = 05/25/83)

VAR375 HIGHEST EDUCATIONAL LEVEL OF RESPONDENT

| CATEGORY LABEL | CODE | ABSOLUTE FREQ | RELATIVE FREQ (PCT) | ADJUSTED FREQ (PCT) | CUM FREQ (PCT) | |
|---|---|---|---|---|---|---|
| NO SCHOOLING | 1. | 3 | 0.4 | 0.4 | 0.4 | |
| ELMNTRY INCOMP | 2. | 7 | 1.4 | 1.4 | 1.8 | 3.8 |
| ELMNTRY COMP | 3. | 12 | 2.4 | 2.4 | 4.2 | |
| JR HI INCOMP | 4. | 18 | 3.6 | 3.6 | 7.9 | 8.7 |
| JR HI COMP | 5. | 26 | 5.1 | 5.1 | 12.8 | |
| HI SCHOOL INCOMP | 6. | 74 | 14.6 | 14.6 | 27.6 | 14.6 |
| HI SCHOOL COMP | 7. | 117 | 23.1 | 23.1 | 50.6 | 27.8 |
| NON-UNI INCOMP | 8. | 24 | 4.7 | 4.7 | 55.3 | |
| NON-UNI COMP | 9. | 75 | 14.8 | 14.8 | 70.2 | 22.9 |
| UNIVERSITY INCOMP | 10. | 52 | 10.3 | 10.3 | 80.4 | |
| UNIVERSITY DIPLOMA | 11. | 14 | 2.8 | 2.8 | 83.2 | |
| BACHELOR'S | 12. | 61 | 12.0 | 12.1 | 95.3 | 12.1 |
| MEDICAL DEGREE | 13. | 3 | 0.6 | 0.6 | 95.7 | |
| MASTER'S | 14. | 16 | 3.2 | 3.2 | 98.8 | 4.8 |
| DOCTORATE | 15. | 6 | 1.2 | 1.2 | 100.0 | |
| NR | 0. | 1 | 0.2 | MISSING | 100.0 | |
| | TOTAL | 507 | 100.0 | 100.0 | | |

MEAN 8.162 STD DEV 3.771

VALID CASES 506 MISSING CASES 1



FILE BAS 1982 (CREATION DATE = 05/25/83)

VAR377 HIGHEST EDUCATIONAL LEVEL OF SPOUSE

| CATEGORY LABEL | CODE | ABSOLUTE FREQ | RELATIVE FREQ (PCT) | ADJUSTED FREQ (PCT) | CUM FREQ (PCT) | |
|---|---|---|---|---|---|---|
| NO SCHOOLING | 1. | 2 | 0.4 | 0.7 | 0.7 | |
| ELMNTRY INCOMP | 2. | 6 | 1.2 | 2.0 | 2.8 | 4.3 |
| ELMNTRY COMP | 3. | 7 | 1.4 | 2.3 | 5.0 | |
| JR HI INCOMP | 4. | 17 | 3.4 | 5.6 | 10.8 | 10.9 |
| JR HI COMP | 5. | 16 | 3.2 | 5.3 | 16.0 | |
| HI SCHOOL INCOMP | 6. | 47 | 9.3 | 15.6 | 31.8 | 15.6 |
| HI SCHOOL COMP | 7. | 77 | 15.3 | 25.6 | 57.0 | 28.1 |
| NON-UNI INCOMP | 8. | 6 | 1.6 | 2.0 | 59.8 | |
| NON-UNI COMP | 9. | 51 | 10.1 | 16.9 | 76.8 | |
| UNIVERSITY INCOMP | 10. | 15 | 3.0 | 5.0 | 81.8 | 23.2 |
| UNIVERSITY DIPLOMA | 11. | 4 | 0.8 | 1.3 | 83.8 | |
| BACHELOR'S | 12. | 38 | 7.5 | 12.6 | 96.4 | 12.6 |
| MEDICAL DEGREE | 13. | 1 | 0.2 | 0.3 | 96.7 | |
| MASTER'S | 14. | 12 | 2.4 | 4.0 | 98.7 | 4.6 |
| DOCTORATE | 15. | 1 | 0.2 | 0.3 | 100.0 | |
| NR | 0. | 1 | 0.2 | MISSING | 100.0 | |
| DK | 88. | 1 | 0.2 | MISSING | 100.0 | |
| NA | 99. | 203 | 40.0 | MISSING | 100.0 | |
| | TOTAL | 507 | 100.0 | 100.0 | | |

MEAN 7.656 STD DEV 3.638

VALID CASES 303 MISSING CASES 205

FILE EAS.1983 (CREATION DATE = 05/25/83)

VARIABLE: OCCUPATION OF SPOUSE

| CATEGORY LABEL | CODE | ABSOLUTE FREQ | RELATIVE FREQ (PCT) | ADJUSTED FREQ (PCT) | CUM FREQ (PCT) |
|---|---|---|---|---|---|
| MANAGERIAL ADMNSTRN | 11. | 42 | 8.3 | 14.0 | 14.0 |
| SCIENCE ENG MATH | 21. | 14 | 2.8 | 4.7 | 18.7 |
| SOCIAL SCIENCES | 23. | 7 | 1.4 | 2.3 | 21.0 |
| RELIGION | 25. | 1 | 0.2 | 0.3 | 21.3 |
| TEACHING | 27. | 9 | 1.8 | 3.0 | 24.3 |
| MEDICINE & HEALTH | 31. | 14 | 2.8 | 4.7 | 29.0 |
| ARTISTIC LIT ART | 33. | 1 | 0.2 | 0.3 | 29.3 |
| CLERICAL | 41. | 44 | 8.7 | 14.7 | 44.0 |
| SALES | 51. | 27 | 5.3 | 9.0 | 53.0 |
| SERVICE | 61. | 35 | 6.9 | 11.7 | 64.7 |
| FARM HORT ANML HUSB | 71. | 2 | 0.4 | 0.7 | 65.3 |
| MINING OIL GAS | 77. | 1 | 0.2 | 0.3 | 65.7 |
| PROCESSING | 83. | 6 | 1.2 | 2.0 | 67.7 |
| MACHINING | 63. | 6 | 1.2 | 2.0 | 69.7 |
| FAB ASSEMB REP | 65. | 12 | 2.4 | 4.0 | 73.7 |
| CONSTRUCTION | 67. | 33 | 6.5 | 11.0 | 84.7 |
| TRNSPT EQ OPRTNS | 91. | 6 | 1.2 | 2.0 | 85.7 |
| MATERIALS HANDING | 93. | 4 | 0.8 | 1.3 | 86.0 |
| NOT CLASSIFIED | 94. | 2 | 0.4 | 0.7 | 86.7 |
| OTHER CRFTS EQ OP | 95. | 5 | 1.0 | 1.7 | 88.3 |
| KEEPING HOUSE | 96. | 24 | 5.5 | 8.3 | 89.7 |
| RETIRED | 97. | 1 | 0.2 | 0.3 | 100.0 |



FILE EAS.1983 (CREATION DATE = 05/25/83)

| | | | | | |
|---|---|---|---|---|---|
| NR | 0. | 4 | 0.8 | MISSING | 100.0 |
| NA | 99. | 303 | 60.0 | MISSING | 100.0 |
| | TOTAL | 507 | 100.0 | 100.0 | |

MEAN 54.750 STD DEV 29.483

VALID CASES 300 MISSING CASES 207

VAR388 OCCUPATION OF RESPONDENT

| CATEGORY LABEL | CODE | ABSOLUTE FREQ | RELATIVE FREQ (PCT) | ADJUSTED FREQ (PCT) | CUM FREQ (PCT) |
|---|---|---|---|---|---|
| MANAGERIAL ADMNSTRN | 11. | 51 | 10.1 | 10.3 | 10.3 |
| SCIENCE ENG MATH | 21. | 30 | 5.9 | 6.0 | 16.2 |
| SOCIAL SCIENCES | 23. | 13 | 2.6 | 2.6 | 18.8 |
| RELIGION | 25. | 1 | 0.2 | 0.2 | 19.0 |
| TEACHING | 27. | 28 | 5.7 | 5.6 | 24.6 |
| MEDICINE & HEALTH | 31. | 28 | 5.7 | 5.6 | 30.3 |
| ARTISTIC LIT ART | 33. | 6 | 1.2 | 1.2 | 31.5 |
| CLERICAL | 41. | 116 | 23.3 | 23.2 | 54.6 |
| SALES | 51. | 40 | 7.8 | 8.0 | 62.6 |
| SERVICE | 61. | 52 | 10.3 | 10.4 | 73.0 |
| FARM HORT ANML HUSB | 71. | 5 | 1.0 | 1.0 | 74.0 |
| FORESTRY | 75. | 1 | 0.2 | 0.2 | 74.2 |
| MINING OIL GAS | 77. | 3 | 0.6 | 0.6 | 74.8 |
| PROCESSING | 83. | 10 | 2.0 | 2.0 | 77.0 |
| MACHINING | 83. | 6 | 1.2 | 1.2 | 78.2 |
| FAB ASSEMB REP | 85. | 20 | 3.9 | 4.0 | 82.2 |
| CONSTRUCTION | 87. | 50 | 9.9 | 10.0 | 92.2 |
| TRNSPT EQ OPRTNS | 91. | 11 | 2.2 | 2.2 | 94.4 |
| MATERIALS HANDING | 93. | 2 | 0.4 | 0.4 | 94.8 |
| NOT CLASSIFIED | 94. | 2 | 0.4 | 0.4 | 95.2 |
| OTHER CRFTS EQ OP | 95. | 2 | 0.4 | 0.4 | 95.6 |
| KEEPING HOUSE | 96. | 17 | 3.4 | 3.4 | 99.0 |



| | | | | | |
|---|---|---|---|---|---|
| RETIRED | 97. | 1 | 0.2 | 0.2 | 99.8 |
| STUDENT | 98. | 1 | 0.2 | 0.2 | 100.0 |
| NR | 0. | 6 | 1.2 | MISSING | 100.0 |
| | TOTAL | 507 | 100.0 | 100.0 | |

MEAN 48.719 STD DEV 28.134
VALID CASES 501 MISSING CASES 6

FILE BAS 1982 (CREATION DATE = 05/25/83)

VAR306 EMPLOYMENT STATUS OF RESPONDENT

| CATEGORY LABEL | CODE | ABSOLUTE FREQ | RELATIVE FREQ (PCT) | ADJUSTED FREQ (PCT) | CUM FREQ (PCT) |
|---|---|---|---|---|---|
| EMPLOYED FULL TIME | 1. | 294 | 58.0 | 58.1 | 58.1 |
| EMPLOYED PART TIME | 2. | 83 | 13.4 | 13.5 | 70.6 |
| UNEMPLOYED | 3. | 31 | 4.1 | 6.3 | 76.7 |
| RETIRED | 4 | 48 | 7.5 | 7.5 | 83.6 |
| IN SCHOOL | 5. | 20 | 3.5 | 4.0 | 88.6 |
| KEEPING HOUSE | 6. | 65 | 13.6 | 13.6 | 99.4 |
| OTHER | 7. | 3 | 0.5 | 0.5 | 100.0 |
| NR | 0. | 1 | 0.2 | MISSING | 100.0 |
| | TOTAL | 507 | 100.0 | 100.0 | |

MEAN 2.381 STD DEV 1.851

VALID CASES 506 MISSING CASES 1



FILE BAS.1982 (CREATION DATE = 05/25/83)

VAR364 EMPLOYMENT STATUS OF SPOUSE

| CATEGORY LABEL | CODE | ABSOLUTE FREQ | RELATIVE FREQ (PCT) | ADJUSTED FREQ (PCT) | CUM FREQ (PCT) |
|---|---|---|---|---|---|
| EMPLOYED FULL TIME | 1. | 191 | 37.7 | 63.0 | 63.0 |
| EMPLOYED PART TIME | 2. | 34 | 6.7 | 11.2 | 74.3 |
| UNEMPLOYED | 3. | 3 | 0.6 | 1.0 | 75.2 |
| RETIRED | 4. | 17 | 3.4 | 5.6 | 80.8 |
| IN SCHOOL | 5. | 4 | 0.8 | 1.3 | 82.2 |
| KEEPING HOUSE | 6. | 51 | 10.1 | 16.8 | 99.0 |
| OTHER | 7. | 3 | 0.6 | 1.0 | 100.0 |
| NR | 0. | 1 | 0.2 | MISSING | 100.0 |
| NA | 9. | 203 | 40.0 | MISSING | 100.0 |
| | TOTAL | 507 | 100.0 | 100.0 | |

MEAN 2.264 STD DEV 1.555

VALID CASES 303 MISSING CASES 204

| | | | | |
|---|---|---|---|---|
| 82. | 3 | 0.6 | 0.7 | 82.1 |
| 83. | 3 | 0.6 | 0.7 | 82.9 |
| 84. | 2 | 0.4 | 0.5 | 83.4 |
| 85. | 4 | 0.8 | 1.0 | 84.4 |
| 86. | 8 | 1.6 | 2.0 | 86.4 |
| 87. | 3 | 0.6 | 0.7 | 87.1 |
| 88. | 3 | 0.6 | 0.7 | 87.8 |
| 89. | 6 | 1.2 | 1.5 | 89.3 |
| 90. | 5 | 1.0 | 1.2 | 90.6 |
| 91. | 2 | 0.4 | 0.5 | 91.1 |
| 92. | 3 | 0.6 | 0.7 | 91.8 |
| 93. | 3 | 0.6 | 0.7 | 92.6 |
| 94. | 4 | 0.8 | 1.0 | 93.5 |
| 95. | 1 | 0.2 | 0.2 | 93.8 |
| 96. | 3 | 0.6 | 0.7 | 94.5 |
| 97. | 2 | 0.4 | 0.5 | 95.0 |
| 98. | 4 | 0.8 | 1.0 | 96.0 |
| 99. | 3 | 0.6 | 0.7 | 96.8 |
| 70 | 2 | 0.4 | 0.5 | 97.3 |
| 71 | 2 | 0.4 | 0.5 | 97.8 |
| 73. | 3 | 0.6 | 0.7 | 98.5 |
| 74 | 1 | 0.2 | 0.2 | 98.8 |
| 75 | 1 | 0.2 | 0.2 | 99.0 |
| 76 | 2 | 0.4 | 0.5 | 99.5 |
| 80. | 1 | 0.2 | 0.2 | 99.8 |



| | | | | |
|---|---|---|---|---|
| | 87 | 1 | 0.2 | 0.2 | 100.0 |
| NR | 88 | 4 | 0.8 | MISSING | 100.0 |
| NA | 88 | 100 | 19.7 | MISSING | 100.0 |
| | TOTAL | 507 | 100.0 | 100.0 | |

MEAN 36.184 STD DEV 18.034

VALID CASES 403 MISSING CASES 104

FILE BAS.1982 (CREATION DATE = 05/25/82)

VAR034 AGE OF MEMBER 2

| CATEGORY LABEL | CODE | ABSOLUTE FREQ | RELATIVE FREQ (PCT) | ADJUSTED FREQ (PCT) | CUM FREQ (PCT) |
|---|---|---|---|---|---|
| | 0 | 1 | 0.2 | 0.2 | 0.2 |
| | 2. | 1 | 0.2 | 0.2 | 0.5 |
| | 4. | 1 | 0.2 | 0.2 | 0.7 |
| | 5. | 1 | 0.2 | 0.2 | 1.0 |
| | 6. | 3 | 0.6 | 0.7 | 1.7 |
| | 7. | 2 | 0.4 | 0.5 | 2.3 |
| | 9. | 3 | 0.6 | 0.7 | 3.0 |
| | 10. | 2 | 0.4 | 0.5 | 3.5 |
| | 11. | 1 | 0.2 | 0.2 | 3.7 |
| | 12. | 2 | 0.4 | 0.5 | 4.2 |
| | 14. | 1 | 0.2 | 0.2 | 4.5 |
| | 15. | 2 | 0.4 | 0.5 | 5.0 |
| | 16. | 2 | 0.4 | 0.5 | 5.5 |
| | 17. | 1 | 0.2 | 0.2 | 5.7 |
| | 18. | 8 | 1.6 | 2.0 | 7.7 |
| | 19. | 9 | 1.8 | 2.2 | 9.9 |
| | 20. | 7 | 1.4 | 1.7 | 11.7 |
| | 21. | 13 | 2.6 | 3.0 | 14.8 |
| | 22. | 15 | 3.0 | 3.7 | 18.4 |
| | 23. | 14 | 2.8 | 3.5 | 21.8 |
| | 24. | 14 | 2.8 | 3.5 | 25.3 |
| | 25. | 15 | 3.0 | 3.7 | 29.0 |



FILE BAS 1982 (CREATION DATE = 05/25/82)

| | | | | |
|---|---|---|---|---|
| 26 | 12 | 2.4 | 3.0 | 32.0 |
| 27 | 12 | 2.4 | 3.0 | 35.0 |
| 28 | 16 | 3.2 | 4.0 | 39.0 |
| 29. | 7 | 1.4 | 1.7 | 40.7 |
| 30. | 15 | 3.0 | 3.7 | 44.4 |
| 31. | 9 | 1.8 | 2.2 | 46.7 |
| 32. | 13 | 2.6 | 3.0 | 49.8 |
| 33. | 10 | 2.0 | 2.5 | 52.1 |
| 34. | 11 | 2.2 | 2.7 | 54.8 |
| 35. | 8 | 1.6 | 2.0 | 56.8 |
| 36. | 8 | 1.6 | 2.0 | 58.8 |
| 37. | 8 | 1.6 | 2.0 | 60.8 |
| 38. | 6 | 1.2 | 1.5 | 62.3 |
| 39. | 8 | 1.6 | 2.0 | 64.3 |
| 40. | 6 | 1.2 | 1.5 | 65.8 |
| 41. | 10 | 2.0 | 2.5 | 68.3 |
| 42. | 3 | 0.6 | 0.7 | 69.0 |
| 43. | 9 | 1.8 | 2.2 | 71.3 |
| 44 | 9 | 1.8 | 2.2 | 73.4 |
| 45 | 5 | 1.0 | 1.2 | 74.7 |
| 46. | 6 | 1.2 | 1.5 | 76.2 |
| 47 | 6 | 1.2 | 1.5 | 77.7 |
| 48 | 5 | 1.0 | 1.2 | 78.9 |
| 50. | 7 | 1.4 | 1.7 | 80.6 |
| 51 | 3 | 0.6 | 0.7 | 81.4 |

FILE EAS.1982 (CREATION DATE = 05/25/83)

| | | | | |
|---|---|---|---|---|
| 60. | 4 | 0.8 | 0.8 | 81.6 |
| 61. | 12 | 2.4 | 2.4 | 84.0 |
| 62. | 2 | 0.4 | 0.4 | 84.4 |
| 63. | 8 | 1.6 | 1.6 | 86.0 |
| 64 | 6 | 1.6 | 1.6 | 87.8 |
| 65 | 1 | .2 | .2 | 88.0 |
| 66 | .. | .. | .. | .. |
| 67. | 6 | 1.2 | 1.2 | 73.3 |
| 68. | 5 | 1.0 | 1.0 | 73.3 |
| 69. | 5 | 1.0 | 1.0 | 74.3 |
| 70. | 10 | 2.0 | 2.0 | 76.2 |
| 71. | 5 | 1.0 | 1.0 | 77.2 |
| 72 | 17 | 3.4 | 3.4 | 80.6 |
| 73. | 3 | 0.6 | 0.6 | 81.2 |
| 74. | 6 | 1.2 | 1.2 | 82.4 |
| 75. | 7 | 1.4 | 1.4 | 83.8 |
| 76. | 4 | 0.8 | 0.8 | 84.6 |
| 77. | 8 | 1.6 | 1.6 | 86.1 |
| 78. | 1 | 0.2 | 0.2 | 86.3 |
| 79. | 2 | 0.4 | 0.4 | 86.7 |
| 80. | 8 | 1.6 | 1.6 | 88.3 |
| 81. | 4 | 0.8 | 0.8 | 89.1 |
| 82 | 3 | 0.6 | 0.6 | 89.7 |
| 83. | 1 | 0.2 | 0.2 | 89.9 |
| 84. | 4 | 0.8 | 0.8 | 90.7 |



FILE EAS 1982 (CREATION DATE = 05/25/83)

| | | | | |
|---|---|---|---|---|
| 85. | 4 | 0.8 | 0.8 | 91.5 |
| 86. | 4 | 0.8 | 0.8 | 92.3 |
| 88. | 6 | 1.2 | 1.2 | 93.5 |
| 89. | 1 | 0.2 | 0.2 | 93.7 |
| 90 | 1 | 0.2 | 0.2 | 93.9 |
| 91. | 3 | 0.6 | 0.6 | 94.5 |
| 92. | 4 | 0.8 | 0.8 | 95.2 |
| 93 | 3 | 0.6 | 0.6 | 95.8 |
| 94. | 4 | 0.8 | 0.8 | 96.4 |
| 95. | 1 | 0.2 | 0.2 | 96.6 |
| 96. | 5 | 0.8 | 0.8 | 97.2 |
| 97. | 3 | 0.6 | 0.6 | 97.8 |
| 98 | 3 | 0.6 | 0.6 | 98.2 |
| 99. | 3 | 0.6 | 0.6 | 98.8 |
| 00. | 3 | 0.6 | 0.6 | 99.3 |
| 03 | 3 | 0.6 | 0.6 | 99.8 |
| 00. | 1 | 0.2 | 0.2 | 99.8 |
| 05 | 1 | 0.2 | 0.2 | 100.0 |
| NA 08. | 3 | 0.6 | MISSING | 100.0 |
| TOTAL | 507 | 100.0 | 100.0 | |

MEAN 58.935 STD DEV 15.306

VALID CASES 504 MISSING CASES 3

FILE BAS 1983 (CREATION DATE = 05/25/83)

VAR020 SEX OF RESPONDENT

| CATEGORY LABEL | CODE | ABSOLUTE FREQ | RELATIVE FREQ (PCT) | ADJUSTED FREQ (PCT) | CUM FREQ (PCT) |
|---|---|---|---|---|---|
| MALE | 1. | 340 | 47.3 | 47.3 | 47.3 |
| FEMALE | 2. | 387 | 53.7 | 53.7 | 100.0 |
| | TOTAL | 507 | 100.0 | 100.0 | |

MEAN 1.537 STD DEV 0.500

VALID CASES 507 MISSING CASES 0



FILE BAS 1983 (CREATION DATE = 05/25/83)

VAR021 AGE OF RESPONDENT

| CATEGORY LABEL | CODE | ABSOLUTE FREQ | RELATIVE FREQ (PCT) | ADJUSTED FREQ (PCT) | CUM FREQ (PCT) |
|---|---|---|---|---|---|
| | 18. | 7 | 1.4 | 1.4 | 1.4 |
| | 19. | 8 | 1.6 | 1.6 | 3.0 |
| | 20. | 13 | 2.6 | 2.6 | 5.6 |
| | 21 | 11 | 2.2 | 2.2 | 7.7 |
| | 22. | 16 | 3.2 | 3.2 | 10.8 |
| | 23. | 26 | 5.1 | 5.1 | 15.4 |
| | 24. | 22 | 4.3 | 4.3 | 21.0 |
| | 25. | 19 | 3.7 | 3.8 | 24.8 |
| | 26. | 22 | 4.3 | 4.4 | 29.1 |
| | 27 | 23 | 4.5 | 4.6 | 33.5 |
| | 28. | 12 | 2.4 | 2.4 | 35.8 |
| | 29 | 13 | 2.6 | 2.6 | 38.4 |
| | 30. | 15 | 3.0 | 3.0 | 41.4 |
| | 31 | 11 | 2.2 | 2.2 | 43.6 |
| | 32 | 16 | 3.2 | 3.2 | 46.7 |
| | 33 | 8 | 1.6 | 1.6 | 48.3 |
| | 34 | 16 | 3.2 | 3.2 | 51.7 |
| | 35 | 17 | 3.4 | 3.4 | 54.1 |
| | 36 | 14 | 2.8 | 2.8 | 56.8 |
| | 37. | 7 | 1.4 | 1.4 | 58.2 |
| | 38 | 6 | 1.2 | 1.2 | 59.4 |
| | 39. | 8 | 1.6 | 1.6 | 61.0 |

POOR

QUALITY

ORIGINAL